The Health Magazine of the American Medical Association

# HYGEIA

Mary M. Kelso, R. N.

O ARTICLES on Allergy,
erculosis, Home Nursing,
d Ca e and Nutrition.

OCTOBER 1942 • 25c

# *What Every Doctor Knows*

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Every doctor occasionally packs his bag and journeys with eager anticipation to a session of one of his medical associations. There he renews valuable and stimulating relationships with his colleagues from every part of the country, many of them leading specialists in medicine. He takes part in discussions of specific diseases and their causes—learns about recent developments in diagnosis and treatment. He witnesses clinical demonstrations where advanced surgical techniques are sometimes revealed. He fortifies his own experience, and returns home refreshed and inspired by contact with new minds, new viewpoints.

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# OCTOBER


# HYGEIA

THE HEALTH MAGAZINE

535 N. DEARBORN ST., CHICAGO, ILL.



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## Is her head well shaped like Ellen's?

Do you know that your baby's head will grow as much in the first year as during the *rest of her life?* That's why she needs Vitamin D right from the start. Give her Squibb Cod Liver Oil every day to help build a well-shaped head, strong bones.

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Sound first teeth help ensure strong permanent teeth. Your baby must have Vitamin D to help transform into sound tooth structure the calcium she gets from milk! So give her Squibb Cod Liver Oil daily.

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Nancy has a straight back, too, because her bones are growing right. Are you giving your baby the same chance? Besides sunshine, your baby needs extra Vitamin D, government authorities say....so give Squibb Cod Liver Oil *every* day from birth.

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**COD LIVER OIL**

# "The Adcomber"

## *looks at Hygeia ads*

Designed for women patriots—a booklet telling the simple facts of enriched flour and enriched white bread, with help on that important topic—*sensible food for wartime!* Just ask for it. Coupon, page 768.

—◈—

***Here's one game you CAN'T afford to lose—and the materials for playing to win . . . that old contest of Personal Daintiness vs. Perspiration and Odor. Costs you only 10c to try this effective "checkmate"—page 778.***

—◈—

*It's a Matter of Importance to babies—this diaper business. But the fellow whose mother chooses Chix is in luck—he gets real comfort, moisture control, air cushioning, no chafe. Full size sample for 10c—page 787.*

—◈—

**Unlax—and try on a new face! New lipstick . . . new powder . . . new cream —selected with the aid of your Beauty Counselor, considered at your leisure, purchased IF and AFTER you decide it improves you. Or—send now for the Try-It Box . . . coupon page 777.**

—◈—

How does your doctor know all he knows? . . . Keep up-to-date on developments in diagnosis and treatment? By occasional welltimed trips to his medical associations for stimulating contacts and scientific demonstrations . . . He *knows how* to get the "know-how." (See illustration, inside front cover.)

—◈—

**An "old familiar face" that's always at hand—and valued!—by mothers, physicians, nurses, and other front line first-aiders—Mercurochrome, to help prevent infection. Note good reasons why, back cover.**

—◈—

Support for weak, tired muscles. . . . new comfort for women with surface varicose veins, with Astarte 2-Way Stretch Elastic Stockings. Help keep you fit. . . . Scarcely noticeable under dress hose! Pictured, page 793.

—◈—

For young warriors, battling up and down the neighborhood . . . knocking about the house . . . skinning knees and cutting fingers—keep MILD TINCTURE OF IODINE handy. A 2% solution . . . stings less, but effectively fights that old enemy—INFECTION! See page 785.

—◈—

**To teach menstruation as a "normal, healthy function," here's up-to-the-minute classroom assistance a-plenty! For your pupils: wholesome, readable explanations directed to two age groups. . . . For teachers: menstrual anatomy charts and teaching outlines. Coupon for teachers' convenience, page 775!**

THE ADCOMBER

# *Who's Who*

## IN

## HYGEIA

Strikes, war and inflation are petty nuisances to the 15 year old girl who is about to attend her first dance and is faced with the major problems of what to wear and how to act. Because she knows this, MARY M. KELSO avoids the usual mistake of parents and teachers everywhere: she doesn't try to measure the problems of youth with the yardsticks of maturity. This rare wisdom, as much as anything, explains why "Talk to Miss Kelso!" is the commonest bit of advice passed from one student to another at the Edward D. Libbey High School in Toledo, Ohio, where Miss Kelso is officially a teacher in the Hygiene and Home Nursing department and unofficially a friendly guide and general counsellor to most of the student body. Libbey students know they can ask Miss Kelso anything without getting what they call "the brush off." The problem of the moment may concern anything from what courses to take next semester to whether or not they should hold hands in the movies; whatever it is, they can count on a serious discussion, a thoughtful analysis of the factors involved and an answer which will also help them to meet the next crisis when it arises—probably in a matter of hours.

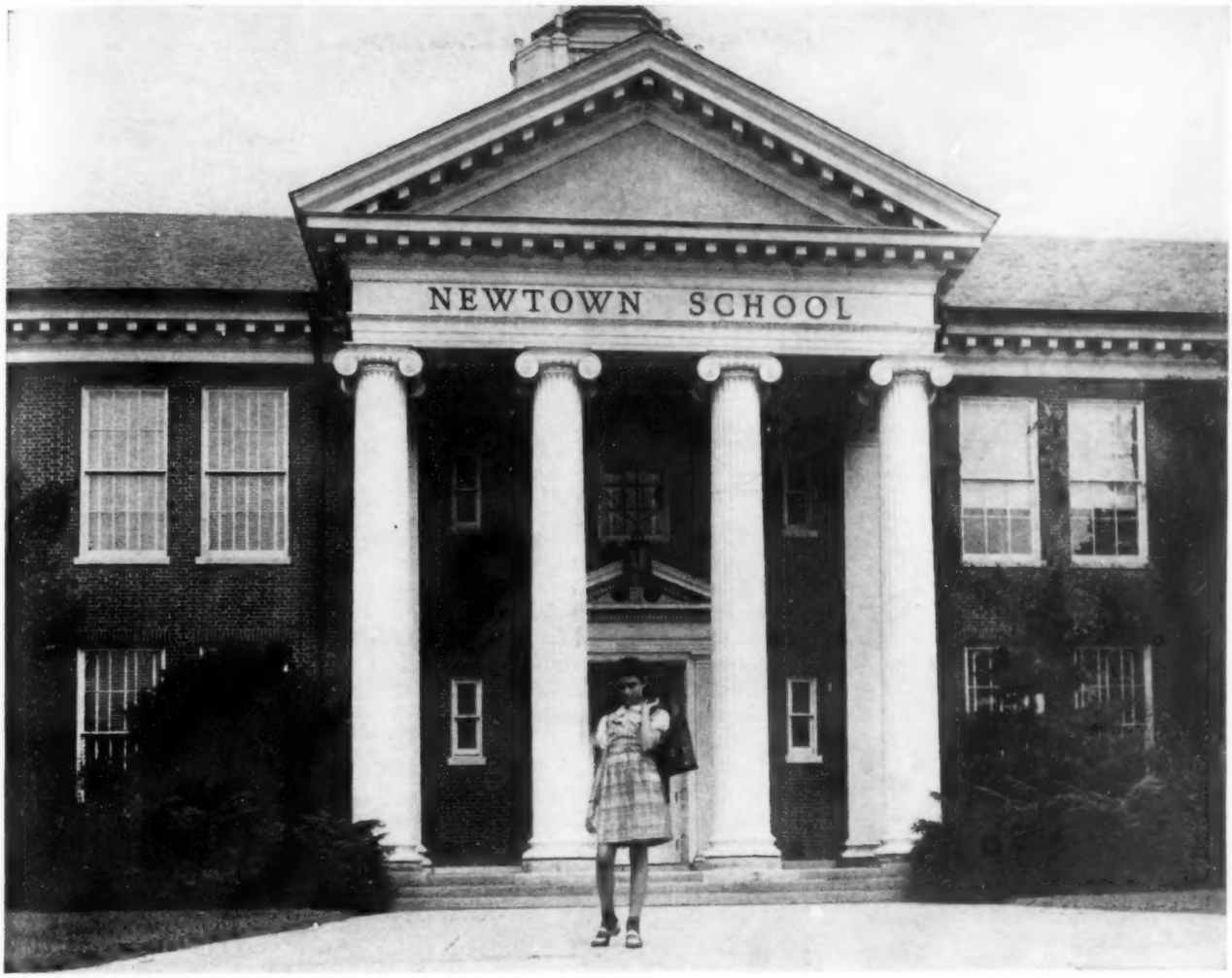
While it is likely that Miss Kelso's success in dealing with young people is largely attributable to the intuitive sympathy which enables her to meet them at their own level, she is by no means lacking in preparation for the more formal aspects of her job. After finishing high school she worked as a telephone operator to pay her living expenses while she attended Wilmington (Ohio) College on a scholarship; graduation from that institution earned her the privilege of teaching in a county school at a monthly salary of $42.50 instead of $40, the usual rate in those prewar years for teachers who couldn't boast a college education. Later, she went on to Ohio State University for a degree in education and then became principal of the high school at New Madison, Ohio.

In 1918, Miss Kelso spent the summer at the Red Cross Training Camp for Nurses at Vassar College. Finding hypodermics and clinical thermometers a refreshing change from textbooks and classroom discipline, she went from there to the Cincinnati General Hospital, where she finished her nurse's training. That, except for occasional summer courses at Columbia University and the University of Michigan, completed her formal education—a nice combination, as it turned out, for the requirements of her present position, which she has held for more than twenty years.

Twenty years of teaching social hygiene and talking to high school students about their personal problems have given Mary Kelso something to say on the subject of sex education for high school students. She says it on page 732 of this issue.

JACK HUDSPETH, author of "Science in Our Schools," is educational adviser for a textbook publisher—pending his induction into the Army as a ground instructor in the Air Forces. He is also president of the department of science instruction of the National Education Association and vice president of the American Science Teachers Association. He is a graduate of

*(Continued on page 787)*




# Smart as a whip yet last in her Class!

POOR SUSAN! She's brighter than many other children in her class. Yet somehow, she can't seem to keep up with the others, no matter how hard she tries!

But Susan isn't to blame! Like many other children, she just can't see her work as clearly as the others. She can't follow her teacher's words on the blackboard because they're blurred. Her simple homework is difficult because the text isn't sharp for her to read and understand. And she doesn't know why because it seems "natural" to her!

What about your own child? Are her eyes fit for the school work she must do? Does she see everything sharply, clearly, as she must in order to do her work well? If her work is disappointing, if she's not as bright at school as she seems to be at home, perhaps a minor visual defect is responsible.

Have your child's eyes examined, now! Even minor defects can become a major problem if not attended to promptly.

**HOW DO SOFT-LITE LENSES HELP YOUR EYES?**

Soft-Lite Lenses are scientifically designed to benefit eyes which are over-sensitive to glare. They do this by controlling the amount of light which reaches the eye, putting tired eyes upon a "light-diet". Because of their scientific nature, Soft-Lite Lenses do not alter color values. They are ground to prescription and are often prescribed for children as well as adults.

*There is only one Soft-Lite—identified by this certificate.*

## Soft-Lite Lenses

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The Fall season is an excellent time to give your skin the benefit of Marcelle protection. If your local druggist does not stock Marcelle Products, write us direct, giving his name.

*Send for Free Circular which fully describes Marcelle Products, outlines directions for their use, and lists prices and shades of each item.*

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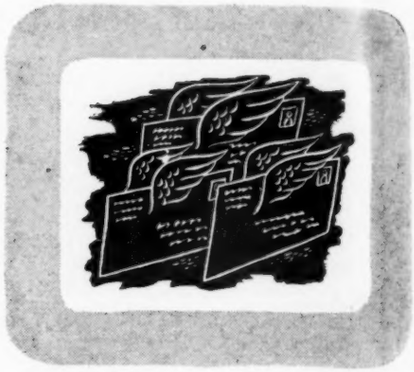
# LETTERS FROM *Readers*



### *Hope for the Hard of Hearing*

To the Editor:

I have read HYGEIA for August with great interest. Permit me to commend sincerely the article on the Kenny treatment. As a former Minnesotan I am proud of Dr. Harrington's part in giving Sister Kenny an opportunity to demonstrate her method. The decision of the American Medical Association to recognize the Kenny treatment is everywhere receiving encomiums. The public must be protected against thousands of quack remedies and treatments; it is recognized that it is not always easy to select the few that prove to deserve approval.

The article, "What Do We Hear?" was of especial interest. I congratulate you on giving this timely subject special attention in HYGEIA. I also read with special appreciation Dr. Halsted's splendid article (*"Help for the Hard of Hearing"*—ED.). I am expressing a hope that the paper by Dr. Halsted will be followed by others dealing directly with what parents should know regarding preventive measures. You are in a strategic position to help remove the defeatism which unfortunately prevails in some quarters regarding help for children who develop hearing troubles.

We greatly appreciate what you are doing. You may be assured that the American Society for the Hard of Hearing and all afflicted with poor ears are with you. We are desirous of proceeding along sound, safe and constructive lines in our endeavors to awaken interest in the conservation of hearing. With the assistance of the American Medical Association and our schools we look confidently ahead to the time when even this perplexing and difficult problem will be met. Faith and hope rest strongly in our hearts.

CONRAD G. SELVIG,
Vice President,
American Society for the Hard of Hearing

Santa Monica, Calif.

### *One Man's Meat*

To the Editor:

I have read with much interest your editorial, "Exercise for Health," in the August HYGEIA, in which you quote from Dr. Peter J. Steincrohn: "Don't lift a finger unnecessarily after 40."

My personal experience and observation have convinced me that at 75 a man could and should take as much exercise as at 25 years of age, for a healthy and happy life, especially if he lives largely in the open, eats properly, refrains from the use of artificial stimulants and otherwise obeys the common laws of nature, intelligently interpreted.

Louisville, Ky. BRENT ALTSHELER

*To Mr. Altsheler and many others who have written to say they exercise and like it at ages up to 75: It is, of course, absolutely necessary to individualize in relation to human beings, to recognize that "one man's meat is another man's poison." There is a great deal of difference in our constitutions, and we have to go on the basis of what the figures show for the great majority. The fact that many die each year as the result of excessive physical activity is an indication that the possibilities of harm actually do exist.*—ED.

# A medical problem your doctor seldom talks about

One of the most perplexing problems your doctor has to face today isn't even mentioned in the medical books. It is *lack of time*.

Already, many thousands of physicians have left their private practice to serve with our armed forces. By the end of the year thousands more will be in uniform.

All this means that the demands on doctors at home will be heavier than they have ever been before. And since your family physician may have to do the work formerly done by two, or even three physicians, he will need all the help and cooperation you can give him during this emergency.

What can you do to help save his time? A number of things. For example, let us suppose that you don't feel well, but aren't so ill that you have to go to bed. In that case, telephone your doctor and describe your symptoms. He will tell you whether it is better for you to wait at home until he comes, or go to his office.

If you are not able to be up and around, and you have to call the doctor to your home, try to telephone him at a reasonable hour—say, before he starts out in the morning. If you and all his other patients do this, he can plan his day's visits more efficiently. You'll not only be helping him save time, gas, and tires, but because you called early, he may perhaps get to see you sooner than he otherwise could.

If you should become seriously ill and your doctor should advise you to go to the hospital, do so by all means. There he can arrange for you to receive the extra care that means so much toward getting you back on the job sooner.

The best way health on the home front can be maintained during the war is for you and your doctor to work together as a team.

***To keep working—you must keep well—SEE YOUR DOCTOR***

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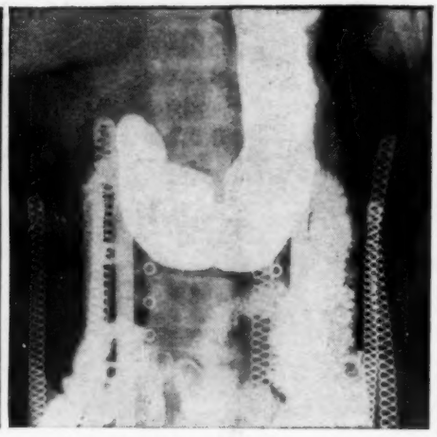
*DETROIT, MICHIGAN*
Seventy-six years of service to Medicine and Pharmacy

**ACTUAL X-RAY** of woman wearing an ordinary constricting corset. Notice how stomach is crowded downward by cramping pressure—a constant menace to health and comfort!



**THE SAME WOMAN** in her individually-designed Spirella. X-ray shows stomach raised about 3 inches—the comfortable, *natural* support that keeps you looking trim and feeling fit!

## These X-rays tell how you can enjoy real corset comfort

*in spite of wartime restrictions!*

THE two X-rays above, taken under medical supervision, show how the Spirella principle of *natural* support and the Spirella method of individual design give you healthful figure control, trim good looks, and real comfort! And wartime restrictions on rubber are no worry for the woman who wears Spirella garments. Spirella has never depended on elastic materials, inner belts, buckles, or other gadgets to take the place of correct design and exact fit. When you buy a Spirella, you get a flexible, light-weight garment individually made for you and no one else!

PRESS DOWN

**It's easier to get a Spirella**

Spirella garments are never sold by stores. A Spirella expert will come to your home, adjust the patented Spirella Modeling Garment to give you the desired support, and then measure your *improved figure* over the Modeling Garment. There's no guesswork. At the factory, your Spirella is *individually* cut, sewn, and finished to these exact measurements—to give you the perfect fitting, natural support that can make you look and feel 10 years younger!

LIFT UP

**Make this 2-Minute Test**

Make this simple test at home tonight, and feel the difference between natural Spirella support and ordinary constricting corsets. First, put your hands at waist and press down. That's the cramping, crowding pressure ordinary corsets exert on stomach and other internal organs. It's easy to understand how it can ruin your figure and injure your health. Now lower your hands and lift up. That's the comfortable support nature intended you to have—the kind you'll get from your individually-designed Spirella as long as you wear it.

Call your Spirella expert for a home appointment tomorrow. She'll show you how modestly Spirella garments are priced, how you can be sure of a perfect fit before you buy, and perfect comfort afterward.

LOOK TRIM AND KEEP FIT WITH

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INDIVIDUALLY-DESIGNED FIGURE SUPPORT

SEND TODAY FOR NEW FREE "KEEP FIT" BOOK

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☐ Send me your free book, "Keep Fit".
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*City* _____ *State* _____

**In Canada,** write The Spirella Co., Niagara Falls, Ont.


## FORECAST

An anatomic student from Mars descending into one of our big cities might easily be misled into concluding that the human nervous system is centered in the abdomen—so sensitive is the civilized bowel. Millions of Americans are victims of one or another of the group of functional disorders which come under the heading of "colon consciousness." If you're one of the unfortunates who wear their gastrointestinal tracts like a millstone around their necks, you'll be helped immeasurably by reading Greer Williams' article, "The Melancholy Colon," in the November HYGEIA.

**Most people go to the doctor because they have some definite symptom. In the absence of positive evidence on examination that disease or infection is present, they are likely to consider that they have a "clean bill of health" and to ignore the doctor's advice about overeating, overworking, exercising and worrying. Yet many men and women at fifty may actually be fit only in the sense that they are not demonstrably unfit. In "Health and Fitness at Fifty," Roger I. Lee, M.D., gives HYGEIA readers a new concept of fitness and some suggestions for achieving and maintaining fitness.**

*What personal qualities and abilities are necessary for the young man or woman who undertakes the study of medicine? What are the elements that make for a successful medical career? What courses must the student take in premedical and medical school? How much money does it take to become a doctor? Is it advisable for a young man to try to work his way through medical school?*

*These and many other questions of importance to young people considering a career in medicine are answered simply and clearly in a forthcoming issue of* HYGEIA *by Wallace M. Yater, M.D., in the article, "Choosing Medicine as a Career."*

***Salvaging manpower for war is as old as history. Even in Homer's time military surgeons were a part of the Greek army. But salvaging manpower for both war and peace is a recent development—a heritage of World War I, a message of hope for World War II and one of the most important single problems facing our nation today. How one State is making over thousands of physically unfit men for war and war work today and for self-supporting, readjusted lives tomorrow is described in an encouraging article by Fred H. Albee, M.D., "Rehabilitation—the New Jersey Way."***

## Not too early to immunize

***Protect your children! See your physician now!*** Today, in this war crisis, immunity is more important than ever before—and it is also more effective! If acted upon at the right time—and that means usually between 3 and 18 months—most children's diseases can be largely prevented. Don't wait till epidemics strike. Take your child to your physician now!

## From birth to adolescence—danger years

***Mothers recognize the peril but they fail to act!*** A nation-wide Roper survey has shown that 50% of all mothers with children under five have never had a single child vaccinated against Smallpox, while 32% have had no child inoculated against Diphtheria. Again—66% of all mothers have never had any of their children inoculated against Whooping Cough.

## Is he still protected . . . ?

***Re-immunization at 6 and 12 against Smallpox may save your child's life!*** Even if your child was immunized in infancy, reinoculation at the age of 6 and again at 12, may be necessary for complete protection against Smallpox. See your physician, too, about the necessity for the Schick Test for Diphtheria. Don't postpone acting. Consult your physician right away.

**Ask your physician for an IMMUNIZATION RECORD CARD**

AN immunization record card can materially help you in giving your children the benefits of complete immunization protection. See your physician for these cards today!

An immunization record card is supplied free to the medical profession by Sharp & Dohme, makers of Pharmaceuticals and Mulford Biologicals, as part of their endeavor to aid in the prevention of communicable disease.

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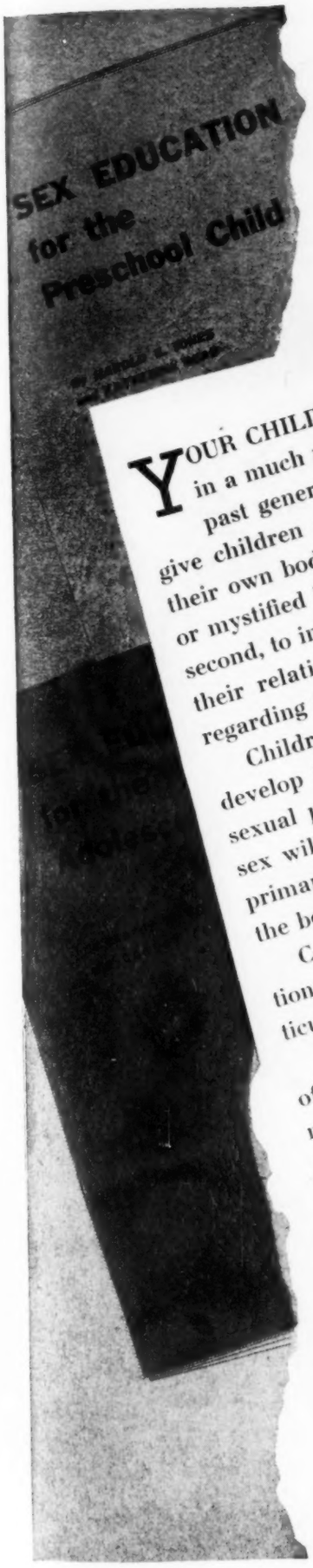
SEX EDUCATION
for the
Married Couple
SEX EDUCATION
for the
Married Couple
By EMILY HARTSHORNE MUDD
THE AGE
OF ROMANCE
Answers to
Practical Questions
on Menstruation
SEX
FOR TH
WOMAN
By CARL G. HARTMAN
THOSE FIRST
SEX QUESTIONS
EX EDUCATION
or the
Ten Year Old
HOW LIFE
GOES ON AND ON
THE STORY
OF LIFE




# SEX EDUCATION

## AN EDITORIAL

YOUR CHILDREN today can be educated in matters of sex in a much more enlightened manner than were children of past generations. Today, sex education is offered, first, to give children at the proper time enough knowledge regarding their own bodies so that they will not be frightened, depressed, or mystified by the changes that occur as they grow older; and, second, to inform them sufficiently concerning these changes and their relationship to childbirth so that their natural curiosity regarding these matters will be satisfied.

Children who are properly informed are not as likely to develop tendencies in wrong directions. They realize that the sexual portion of life is natural. Proper knowledge regarding sex will safeguard the child against diseases which are spread primarily by sexual relationships. Such knowledge will bring the boy or girl to the time of marriage suitably prepared.

Competent educators have indicated their belief that the questions of the child should be answered honestly and fully, particularly through the kindergarten and the first three grades.

There must also be an attempt to cultivate the proper attitude of respect and comradeship between boys and girls. They should not be opposed to each other in either mental or physical activities. Neither should boys be punished in school by being forced to sit with girls, nor should their work be compared unfavorably with that of girls in the same classes.

As boys and girls grow older, a greater realization of sexual differences and sexual changes comes to them. Certainly by the time the boy and girl are 12 to 13 years of age, they should have adequate information regarding their own bodies in relationship to venereal diseases, illegitimate childbirth and promiscuity.

Many excellent pamphlets have been prepared which will aid parents and teachers in giving the proper information to the child.

# Sex

By **MARY M. KELSO**

IS IT NOT BETTER to prevent unhappy or broken homes by giving scientific information to our young people than to allow them to follow their instincts blindly and marry without proper preparation, thus in many instances causing untold mental suffering and loss of social standing?

Is it not better for parents and teachers to enlighten our youth, who are hungry to learn facts regarding God's method of populating the earth, about their part in this plan and their responsibility to themselves, to the future generation and to society as a whole, than to allow them to acquire distorted ideas and ideals from undesirable sources or to experiment and so become disillusioned, bitter and less able to make satisfying physical, mental and spiritual adjustments in marriage?

# EDUCATION IN HIGH SCHOOL

We would be closing our eyes to what we know to be true were we to assume that young people enter high school without a great deal of information about sex. That many of their ideas are based on misinformation is a matter worthy of consideration, for this fact lays the foundation for maladjustments in the home and at school, and prepares the way for unhappy marriages.

Ideally, a child should be wanted when he is born; he should grow up in an atmosphere of love, sympathy and understanding; he should always feel that he may go to either parent and without embarrassment ask any question that may arise to trouble him and have it answered frankly to the best of that parent's ability. Fortunately, more and more frequently, we are finding instances where high school pupils have had sex instruction given them by their parents. We hope that by giving correct information and teaching appropriate names for parts of the body and bodily processes we may remove any feeling that certain subjects are taboo.

As the child develops and grows into young manhood or womanhood, new questions naturally arise in his mind. If the parent is unable to give an immediate answer to any query, he should explain that he will do so a little later. This he must not fail to do after having had time to think the matter over, study it and discuss it with some one who can give helpful advice. Neglect to follow through with the answers to such questions causes a loss of confidence which can never be completely restored.

Recently, within one week, two fine young men came to talk to me. Each complained that he could not discuss anything with his father. One lad said he had tried time and again to "get next" to his dad but found him disinterested or always too busy to give any of himself to his son. This father comes home from work, eats a big meal and buries himself behind a newspaper. The other youngster had written an undesirable note to a girl whom he thought he loved. It was handed to me by a teacher who had found him writing it during his study hour. He works in a drug store after school as often and as *(Continued on page 794)*

***In the Hygiene and Home Nursing Department, students practice the bed bath technic.***

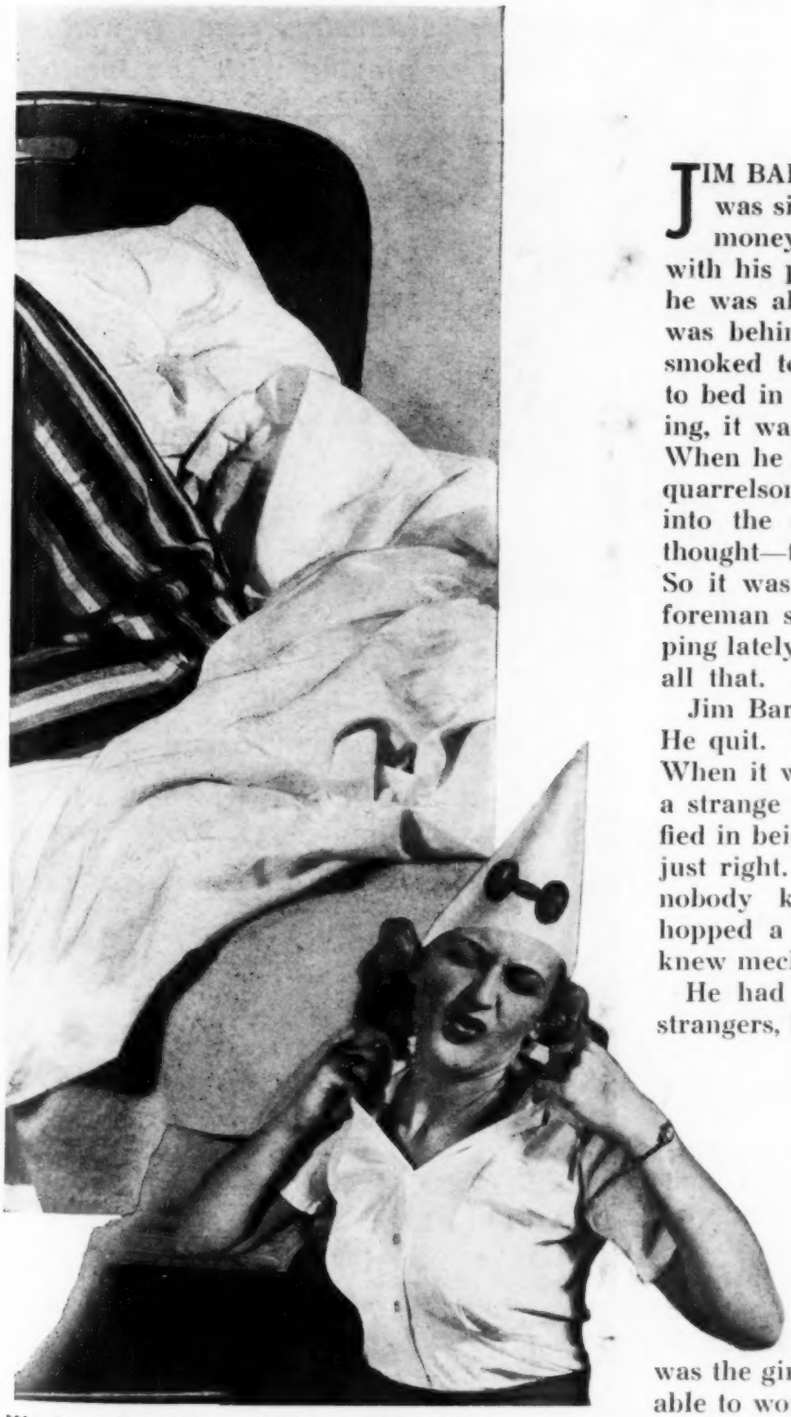
***They study the function of menstruation and learn how to relieve menstrual cramps.***

***Hygiene students also practice the proper methods of caring for infants.***

# A Better

*Workers who indulge in all-night poker sessions, five cent lunches or dates every night of the week must pay for their unwise use of leisure time.*

# Way of Living



*Week end parties which combine late hours with excessive eating and drinking, overexercising or overexposure take their toll on Monday morning.*

**By W. W. BAUER**

JIM BARNES was a poker-playing fool. He was single, had a good job and made good money. Nights and week ends he spent with his pals around the poker table. When he was ahead he couldn't quit, and when he was behind—well, you know how it is! He smoked too much, and drank some. He got to bed in the wee small hours. In the morning, it was all he could do to get out of bed. When he got to work he was clumsy, touchy, quarrelsome. One day his foreman called him into the office. He didn't give that much thought—they had always been good friends. So it was like a blow in the face when the foreman said to him, "Jim, you've been slipping lately—you're hard to get along with, and all that. I'm afraid I've got to lay you off."

Jim Barnes saw red. He raged and swore. He quit. No foreman was going to fire him! When it was all over, Jim went his way with a strange uneasiness. He knew he was justified in being angry, yet something didn't seem just right. He decided to go far away where nobody knew him. "Poker Jim" Barnes hopped a freight to a distant city where he knew mechanics were needed.

He had no trouble getting a job. Among strangers, he did not immediately find a poker game to get into. He went to bed early for lack of something else to do. And he couldn't help thinking about what the foreman had said: "Jim, you can either pay for time off—or you can collect for it."

That didn't seem to make sense. Collect for time off? Jim Barnes began to look around him. There was the girl in the mailing department, hardly able to work one Monday morning on account of the terrific sunburn which practically made her sick. And the stenographer whose numerous dates tired her out until she was no good on the job. And one of Jim's new acquaintances

who had only a nickel for lunch because he had spent his week's pay at a night club. Jim began to suspect what the foreman meant. These people were paying for their time off, just as he had paid—paying with misery, and fatigue, and lost opportunities, and perhaps with injury to their health. Maybe they would cause accidents to fellow workers because they were too tired to look after their own safe conduct. They were paying for time off—paying too much!

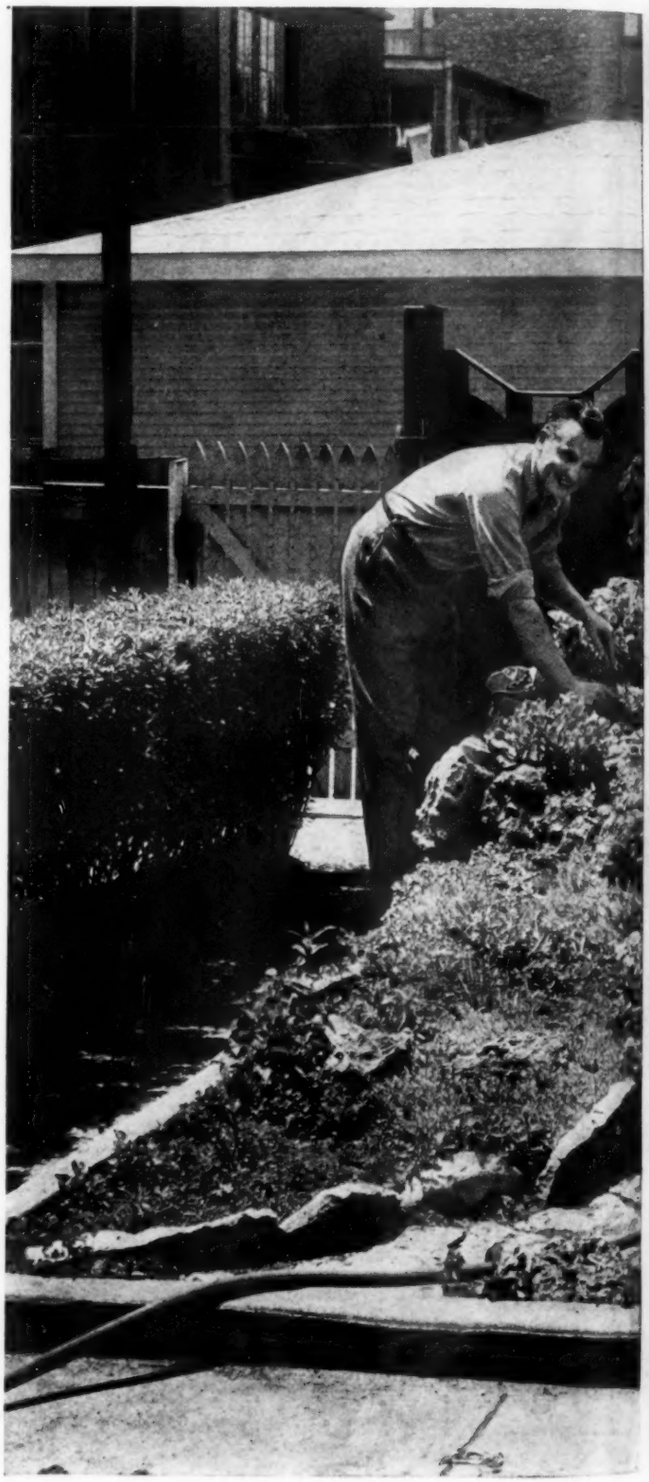
But there were others who were actually collecting for time off—those who indulged in good wholesome activities, such as swimming, chopping wood (or inactivity, such as sawing wood), or games and sports that left no hangover. These people were actually getting paid for time off—paid in better health, more fun, better earning power. Jim Barnes changed his ways, and now he's doing all right, with good health, a home, a wife and baby. He is now collecting for time off, instead of paying for it.

Who is Jim Barnes? There isn't any Jim Barnes, and any similarity of names is purely coincidental, as they say in the films. This Jim Barnes is a film character, a "type." There are thousands like him, and like the girl with the sunburn, and all the others. They are taken from a talking film which is part of a program of health education functioning in industry. Talking films in health education are nothing new, either in industry or elsewhere. Neither are posters, or folders, or health meetings, all of which are part of this health education program, which in turn is the project of Mr. Neville Pilling, executive officer of the Zurich group of insurance companies.

The health education program, of which a part of one talking film has been briefly summarized, utilizes the usual materials in health education. The talking films, posters, leaflets and public address system broadcasts which comprise the tools of the project are of excellent quality. They are educationally and scientifically sound, and adapted to their special purposes with the advice and collaboration of scientific consultants and persons experienced in the interests and philosophy of the audiences to be reached. They are practical, sensible, friendly and useful. In this respect they do not differ markedly from other similar materials used in health education, both in industry and elsewhere. The distinctive feature of this particular program is its continuity, coordination and underlying philosophy.

In common with many insurance carriers, both life and casualty, the Zurich company has long had an educational program, limited at first to the safety field but soon extended into the health field because loss of working

***Gardening, swimming, reading, working at home or playing with the family—***



days due to health failure was several times greater than the loss due to accidents. Such educational programs by insurance companies are an accepted feature of the health education scene in America. They have contributed some of the best and most constructive progress in health education. They return a profit to the sponsors, but that is not their main purpose. The profit is incidental to the main objective, namely, the saving of life and the promotion of health. Such combination of enlightened self interest with genuine altruistic motivation is an encouraging manifestation of modern business. The very fact that a health education program linked to profit-making enterprise can pay its own way is no mean advantage. It at once removes the health education project from the nonessential class. It lessens the likelihood that health education will be regarded as "trimming" or overhead, nice to have when times are good but quickly dropped when the going gets tough.

***—these are the wholesome activities which let one "collect" for time off!***

The distinctive feature of the Pilling program is its recognition of a principle on which modern educational efforts are based, namely that learning proceeds out of interest and necessity. Little Ronald will not learn to add, perhaps, merely for the sake of adding, but when he finds that big sister will beat him out of his allowance unless he knows how much two and three add up to, depend upon it, he will learn quickly! In the same way, the ordinary human, be he executive or mechanic, truck driver or bookkeeper, will not learn much about his health until he has a reason for doing so. Of course, he already has the reason, but he does not usually think so unless and until his health is threatened, or he thinks it is, or until he loses or is about to lose something he wants by reason of health limitations. The job is to make the men and women in offices or shops—and that includes the boss—want to learn about their health. And to want to apply what they have learned.

The Zurich approach is to the men and women in industry themselves, not to management, though management cooperates. The program, because it teaches how to keep safe from ill health and accidents, is called the Safety Zone program. It is managed in each establishment by a Safety Zone Committee appointed, according to the situation in the plant, either by management or by employee representatives. Each department of the organization has one or more representatives. Each committee member is given an attractive lapel button as identification. From that time on the program is up to the Committee. It is self-starting, self-activating, democratic. The materials are furnished month by month by the Zurich *(Continued on page 788)*

# Making an Occupied Bed

Fig. 1: Arrange the pillow case over the back of the chair so that it may be used as a linen bag.

Fig. 2: In preparing the clean foundation linen, roll the right side up against the patient first.

Fig. 3: Turning the patient over to the side of the bed already made up, remove the soiled linen.

By Alice L. Price

# HOME NURSING

MANY PATIENTS cared for at home are unable to sit in a chair even for as short a time as it takes to make the bed. Under these circumstances, the bed must be made without removing the patient. An easy, efficient way of carrying out this procedure is given here in detail, so that it may be readily accomplished without discomfort or strain for the patient.

First place a straight chair in line with the foot of the bed. Remove the pillow, but be sure that at least one pillow is left on the bed if removal causes discomfort to the patient. Remove the pillow case from the pillow, turn a large hem in the case and place it over the chair back so that the inside of the case may be used as a linen bag to receive soiled linen as it is removed from the bed. Place the pillow crosswise on the seat of the chair (fig. 1).

Loosen the top covers (spread, blanket and top sheet) all along the side and foot of the mattress, placing the surplus that was tucked under the foot of the mattress over the foot of the bed and allowing it to hang free.

Grasp the spread at its top edge (hands separated, right hand at upper right corner of bed, left hand at upper left corner); fold it back upon itself until the top edge is even with the lower edge at the foot of the bed. Evenly match the left corners of the spread at the foot and, keeping top and bottom edges together, hold the center of the spread in the right hand. With the left hand, grasp the center of the spread at the fold made across the bed. Step back from the bed and remove the spread. Then fold the spread and place it on the chair on top of the pillow. Remove the blanket in the same way, fold and place it on the chair.

Place the bath blanket over the top sheet which covers the patient. The bath blanket is a single cotton blanket which is used to cover the patient during routine nursing care. Ask the patient to hold the bath blanket at its top edge, or tuck it well under the shoulders to keep it in place, and remove the sheet from under the blanket. Fold the sheet and place it on the chair. Next turn the patient to the side facing away from you, keeping him covered with the bath blanket. Loosen the foundation linen (draw sheet, rubber sheet and bottom sheet) at the side and top of the bed.

Roll the draw sheet evenly through its entire width close to the patient, tucking it under the hips and shoulders just far enough so that it will stay in place. *(Continued on page 774)*

By MIRIAM ZELLER GROSS

# FATIGUE

"IN WHAT IS NOW the third year of the present world war, I am glad to say to you that as far as American industry is concerned there has not yet been perpetrated one successful major act of foreign-inspired sabotage."

So said E. A. Tamm of the FBI a few months ago, speaking on the protection of men and machines.

But during the same three years, American workmen will have lost more than 4,500,000,000 working hours because of preventable accidents! They will have lost an additional 31,500,000,000 working hours through illness. During 1941 alone, if the time lost through accidents and illness had been applied to fighting equipment it might have produced 132,000 big bombers, 240,000 medium size bombers, 660,000 fighter planes, 3,600 submarines or 360 large battleships. Mr. Tamm, who is J. Edgar Hoover's assistant, also said:

"With enough accidents, the saboteur doesn't have to turn a hand. His work is already being done for him."

Men in overalls march step by step along with the men in uniform, and the fighting man can win ground only as rapidly as the men in the production lines supply the ammunition. Anything which interferes with production is fifth column stuff, by whatever name it goes.

Dr. Andrew C. Ivy, professor of physiology at Northwestern University's School of Medicine, analyzed the problem recently in *The Journal* of the American Medical Association. He reports that Hitler has returned the eight hour working day to Germany. This is astonishing at first glance when one considers the additional pressure for production under which the German workman labors. There is no fear of strikes, because Hitler and Hirohito do not have them. *Produce or die* is their formula for all-out production. Reactionary management is exterminated. Workers do as they are ordered.

Why then this complete reversal of what Hitler thought mandatory at the beginning of the war, when by a series of decrees he

# SABOTEUR

removed all safeguards against overwork. Even holidays, denied months ago, have been restored, and women and children are not permitted to work at night.

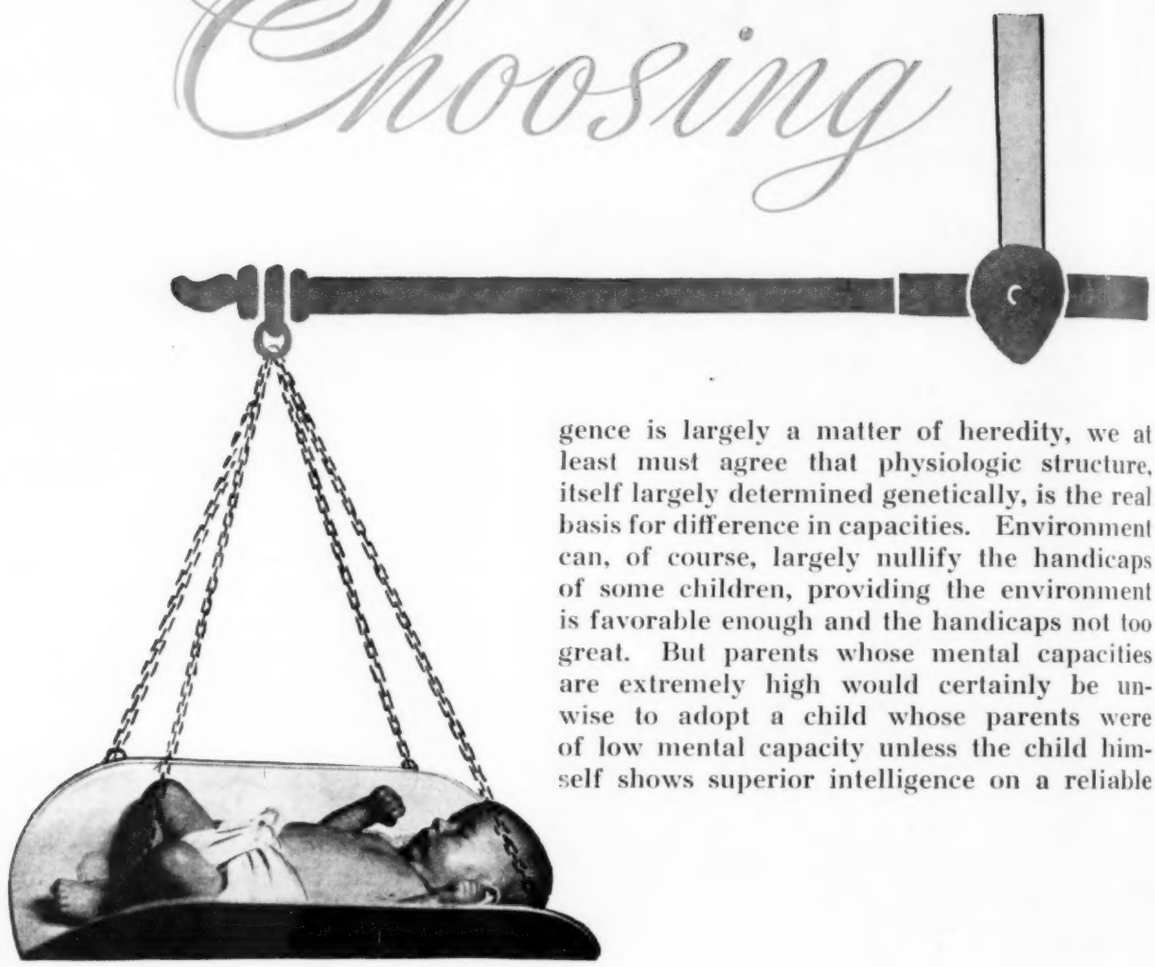
Medical publications tell the story. Increased illness, absenteeism and accidents attributable to longer working hours proved a higher price than Hitler could pay with the war entering its more critical phases. The British have taken heed of their own and Germany's mistakes. We shall do well to follow suit.

Dr. Ivy stresses the fact that the desire to accomplish must come from within if the worker is to produce the most possible and feel the best. A tremendously accelerated efficiency seems to come from muscles coordinated with a fanatical desire to achieve. This is what helps athletes to break records. It explains the seemingly superhuman accomplishments found in Germany at the beginning of the war, and today in Russia.

Whether or not you or the group you work with "go stale" has a lot to do with production. Doctors do not know just what staleness is—it may be a matter of chemistry involving the accumulation of exhaustion products. They do know that extracts made from the tired muscle of a frog will make a fresh frog completely exhausted when the extract is injected into him. The emotions may also have something to do with staleness. Chronic tiredness occurs because a person lacks the desire to excel. Dr. Ivy thinks that short vacations may be the answer to the problem of staleness. Even in Chaucer's day, British overlords said that monotony was "soul destroying and the breeder of trouble."

The British had just as much incentive to produce and to fight after Dunkirk as we have had since Pearl Harbor. The British had the same incentive in 1914. Yet during the first World War and again late in 1940 working hours were lowered for both men and women. The British Health Board made its original investigations because of the great increase in illness among munitions workers. More than one fourth of the *(Continued on page 775)*

# Choosing



## HEREDITY

STUDIES of genius offer clear evidence that learning potentiality or capacity is not independent of the laws of genetics. This is not to say that a child's intelligence is inherited. Rather it is to say that all the *inherent capacity* for intelligence is limited by the particular neural and other physiologic structures of the individual. The mind itself is a function of the organism; the organism is, in each specific case, an individual one different from all others in various directions and degrees. We may think of these differences as being based on countless factors in the physiologic structure of glands, neurones, cells and other parts of the total organism.

The reader will see that some of these differences in characteristics are determined by the inherited patterns. Hence, even if we do not wish to say, as some scientists do, that intelligence is largely a matter of heredity, we at least must agree that physiologic structure, itself largely determined genetically, is the real basis for difference in capacities. Environment can, of course, largely nullify the handicaps of some children, providing the environment is favorable enough and the handicaps not too great. But parents whose mental capacities are extremely high would certainly be unwise to adopt a child whose parents were of low mental capacity unless the child himself shows superior intelligence on a reliable test given and interpreted by a competent clinical psychologist.

No informed person denies that Mendelian laws of inheritance play some part in fixing the upper limits for individual learning capacity. Just how large a part the laws play has not been determined. The same facts are true with regard to special talents. For example, children have been known who, at normal kindergarten age, have mastered the elements of geometry, chess, astronomy, Latin, piano playing, composition or bridge. Surely each of us knows children—not our own, but a neighbor's—for whom no environment could make such achievements possible!

Of course there are many exceptions which prove that children often differ greatly from their parents. Bright parents sometimes have dull children, and apparently ordinary parents may have an offspring who is a rare genius. But these cases are in accordance with the biologic law of variation; the majority will always show a tendency to be like their parents.

# Your Child

By DOUGLAS E. LAWSON

## ENVIRONMENT

If two prospective adoptive parents, both of whom are mentally gifted and highly talented, adopt a child whose parents were of low average intelligence and learning capacity, it seems improbable that disappointment and embarrassment, or even serious maladjustment, could be avoided. This would be especially true if there are other children in the home, biologically the offspring of these parents, to heighten the effect of contrast. Prospective adopters of children should, if the child is too young for reliable mental measurement, ascertain the facts about the mental capacities of its parents.

This consideration leads to the question of whether adoptive parents should know who the parents of the child are. Frequently, if the health, personality traits and capacities of the biologic parents can be determined or if good medical and psychologic advice can be secured, it may actually be better for the adopting parents never to know who the child's previous parents were. The reasons here are partly psychologic and have to do with the mental attitudes of the adopting parents. To feel complete parenthood and "ownership" one should avoid frequently identifying the child specifically with other parents. And of course the child, for his own mental and emotional advantage, must establish himself securely as a complete part of the new home, *exactly as though he had been born into it!*

It must be remembered also that even the experts do not judge a child's intelligence by its appearance. Psychologists use careful scientific devices for this purpose. Even an extremely defective mind, including some types of imbecility, may be disguised in infancy by attractive features such as sparkling eyes and a happy, pleasing smile.

The clinical psychologist is equipped with special knowledge and special instruments. He understands age-level norms of behavior, intelligence quotients, and mental age factors. He makes use of standardized diagnostic technics with which only the specialist in the field of mental measurements is competent. He consults medical specialists where there is any indication of birth injuries affecting the brain or other types of trauma or disease which might affect the interpretation of his own findings. He makes allowances for significant environmental influences.

Any state bureau of child welfare or any good child guidance clinic should be equipped to offer expert advice or consultation service in this regard.

Should the child be told that he is adopted? There are so many considerations to be taken into account here that no one can speak for all cases. But for most cases the answer seems clearly indicated by the heavy weight of much evidence. If *(Continued on page 770)*

# Feast

By
JOHN O. McREYNOLDS

***Like the rest of the body, the eye needs nourishment—a well balanced diet is required to maintain normal eye function***

NO LIVING STRUCTURE can preserve its normal activity without adequate nourishment. Thus we cannot discuss the maintenance of normal eye function without reference to its nutrition.

By far the largest portion of the eyeball is composed of the *vitreous humor*, a clear and transparent material useful in the transmission and refraction of light. The presence of blood vessels in these structures would interfere with proper passage of the rays of light. Thus the major portion of the eye has only an indirect connection with the blood supply; and blood, as we know, is the great nourishing medium for the entire body. How, then, can the eye receive its nourishment through the blood without the presence of blood vessels? In order to understand how this is accomplished, we must first have some knowledge of the nature of blood.

The blood is a transparent fluid, called *plasma*, in which are floating countless rounded bodies or corpuscles. The corpuscles are not transparent but give color to the blood and carry oxygen to the tissues. The transparent liquid in which the corpuscles float

# FOR THE Eyes

contains the real nourishment in the blood; thus nourishment can be secured from the blood only by utilizing the transparent elements found in the plasma. This clear, nutrient fluid furnishes a refined product called *lymph* which may be compared to the clear gasoline obtained from crude oil and which circulates through lymph spaces or channels, giving nutrition without producing obstruction of light and thus providing power and vitality to all the tissues through which it passes. The composition of this lymph depends on the purity and strength of the blood from which it is derived. Therefore, the integrity of all the clear substances of the eye hinges on getting to these tissues the proper character and quantity of lymph. The function of the visual apparatus always has this systemic background which must never be forgotten.

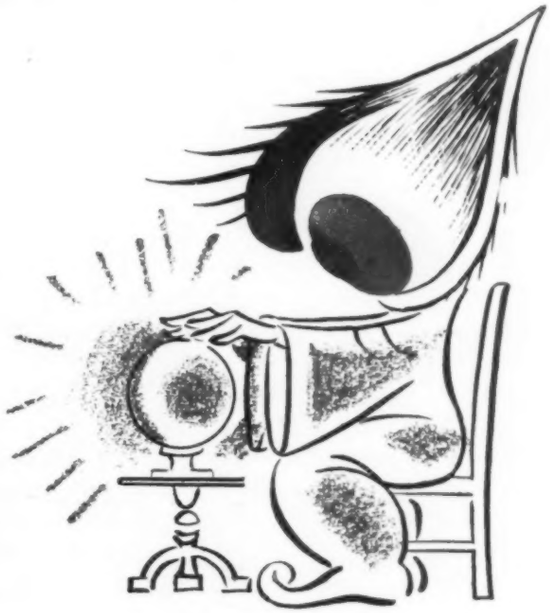
Diseases affecting the blood and its circulation influence the lymph available for nutrition. The more opaque structures within the eye, including nerve tissue, muscle tissue, fibrous and elastic tissue, must likewise depend for their normal life and function on the general and local circulation of normal blood. Opaque tissues like the iris, the ciliary or focusing muscle, the retina and the choroid have independent blood circulation and consequently can secure a larger quantity of lymph, or "blood gasoline," than the transparent refracting media.

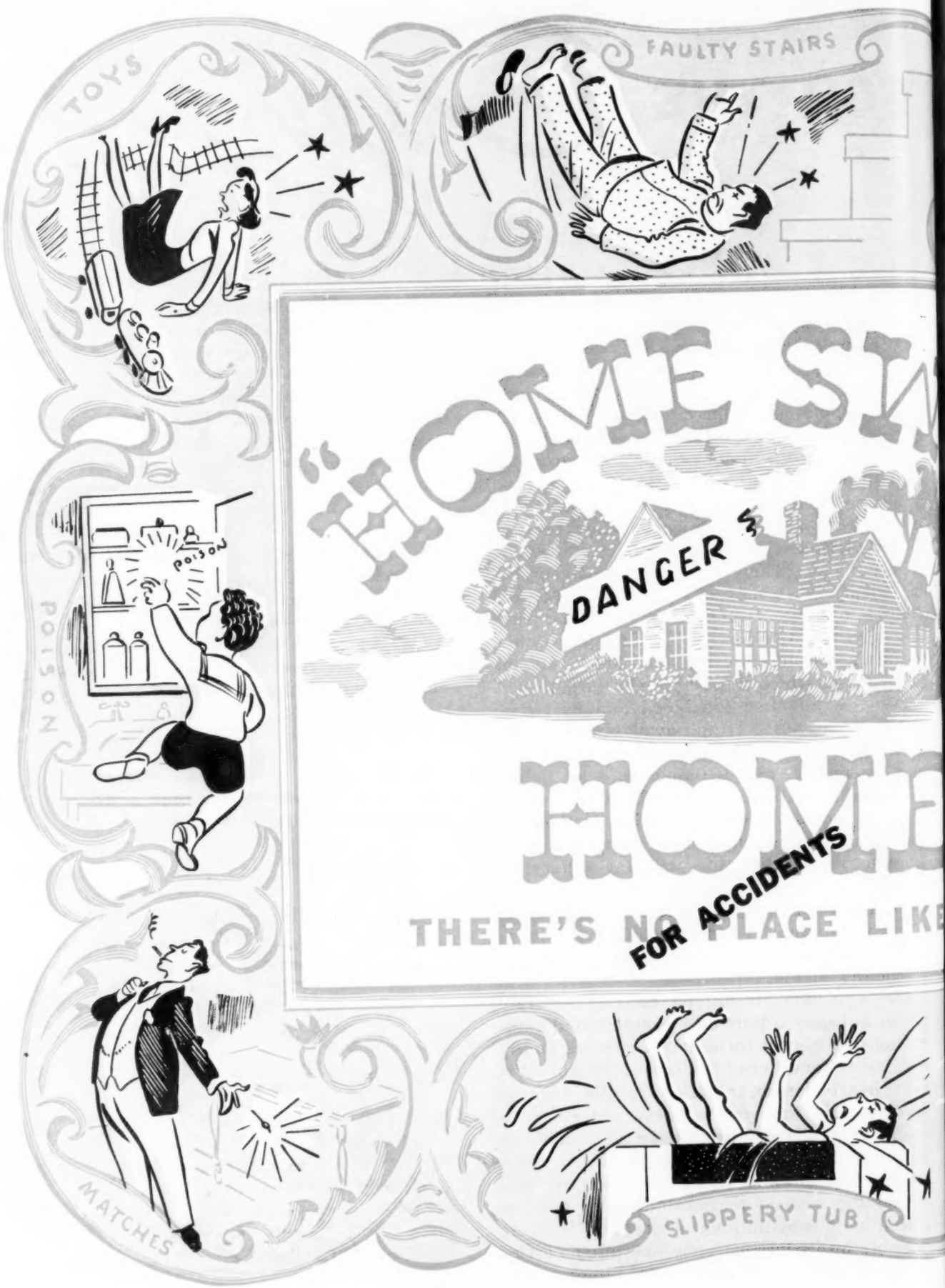
The eye, then, is not an entirely separate organ but only a part of a complex and comprehensive system including the entire bodily organism. Conditions like diabetes, Bright's disease, heart disease, malaria, syphilis, anemia, toxemia and the various local and constitutional or bodily disorders have a pronounced influence on the organ of vision. Many times an examination of the interior of the eye will reveal the earliest manifestations of obscure systemic or constitutional states; this is made possible by its transparency—no other part of the body offers such exceptional opportunities for accurate inspection and discriminating analysis. Minute hemorrhages, obstruction of blood vessels, products of inflammations, areas of atrophy or shrinkage with pigment formations all tell us of the early stages of many diseases not yet apparent in distant organs or in the general system. Even the factors of fatigue, pain and visual irregularities convey signals of danger to the trained physician. Where else can we find such delicate barometers foretelling the approach of violent constitutional storms that hover about us?

The world today is food conscious. The daily press, popular magazines and radio are filled with discussions about foods and their special influence on health.

This is a good omen, and yet it is possible for erroneous impressions and incorrect information to gain dominance in the public mind. It is the duty of the *(Continued on page 760)*

***The eye reflects various bodily disorders and because of its transparency offers a means of detecting early signs of disease.***




TOYS
FAULTY STAIRS
"HOME SW
DANGER
HOME
FOR ACCIDENTS
THERE'S NO PLACE LIKE
POISON
POISON
MATCHES
SLIPPERY TUB

# MAKE YOUR HOME SAFE

**By MARIE E. ANSEL**

WRITERS in newspaper and magazine columns cry direful warnings, placards picture startlingly realistic photographic accident shots, and statistics pile up in gruesome graphs to shock us into a more responsible attitude toward accident prevention. Yet, until tragedy or suffering strikes him, the average citizen pays little heed to the oft repeated reminders that it pays to be careful. And the accidents keep on happening.

Possibly the very statistics and staggering figures dull the mind to the peril that lurks in unsuspected places. Normal persons will want to avoid both extremes: a fear psychosis attended by overcaution and needless nerve tension, as well as a foolhardy indifference to well marked danger signals. Fortunately, the safe path lies along a course marked out by common sense. Recognizing the hazards constitutes the initial step in the right direction. Acting on such knowledge takes one far along the way toward safety.

What then are the danger spots for us, at home? Because we are lulled by the sentimental half truth that home is the haven of security and peace, we may forget a few of the potential hazards that its four walls harbor. Let us strike out first the more obvious "bewares": loaded firearms left in accessible places; toys strewn about floors and on stairways; bottles of poison not properly labeled; sharp-edged implements and matches within reach of children, and so on ad infinitum. These dangers we readily recognize; but the conditions which we may not appreciate as possible threats to life or limb should receive their due of attention at last.

Consider the stairways in your home. Has space been conserved at the sacrifice of safety? If you daily ascend and descend a Jacob's ladder, so built to save space, you may one day step too far out and thereafter join the angels who trod the golden rungs in the patriarch's dream. A less ethereal alternative suggests a stairway constructed with a proper consideration for the horizontal as well as the vertical spatial relations. A size 11 foot does not fit well on a 7 inch tread. Better give up a few feet of floor *(Continued on page 789)*

# MOSQUITO

HOW A YOUNG AMERICAN spent months in the malaria-ridden cocoa districts of Trinidad to conduct investigations safeguarding the health of our armed forces on duty in tropical stations is the story behind the award recently given by the American Society of Tropical Medicine to Dr. Lloyd E. Rozeboom, associate in medical entomology at Johns Hopkins University. Dr. Rozeboom is the latest recipient of the Society's coveted Bailey K. Ashford award—given every other year to a young citizen of the United States who has done outstanding work in tropical diseases.

Dr. Rozeboom's most recent research has confirmed the observations of Dr. Eric de Verteuril, formerly Senior Medical Officer of Health in Trinidad, that malaria (the worst tropical disease of the Western Hemisphere) in the interior of Trinidad does not come, as had been believed before Dr. de Verteuril's surveys, from mosquitoes that breed in swamps and dead pools. The mosquito carrying the malaria parasite in the interior of the island breeds instead in the bromeliads, or air plants, which grow on the trees of the jungles. This species, the *Anopheles bellator,* found in Trinidad and sections of South America, has breeding and biting habits vastly different from mosquitoes of the genus *Anopheles* that breed in the marshes and dead pools of malaria-infested districts of the United States.

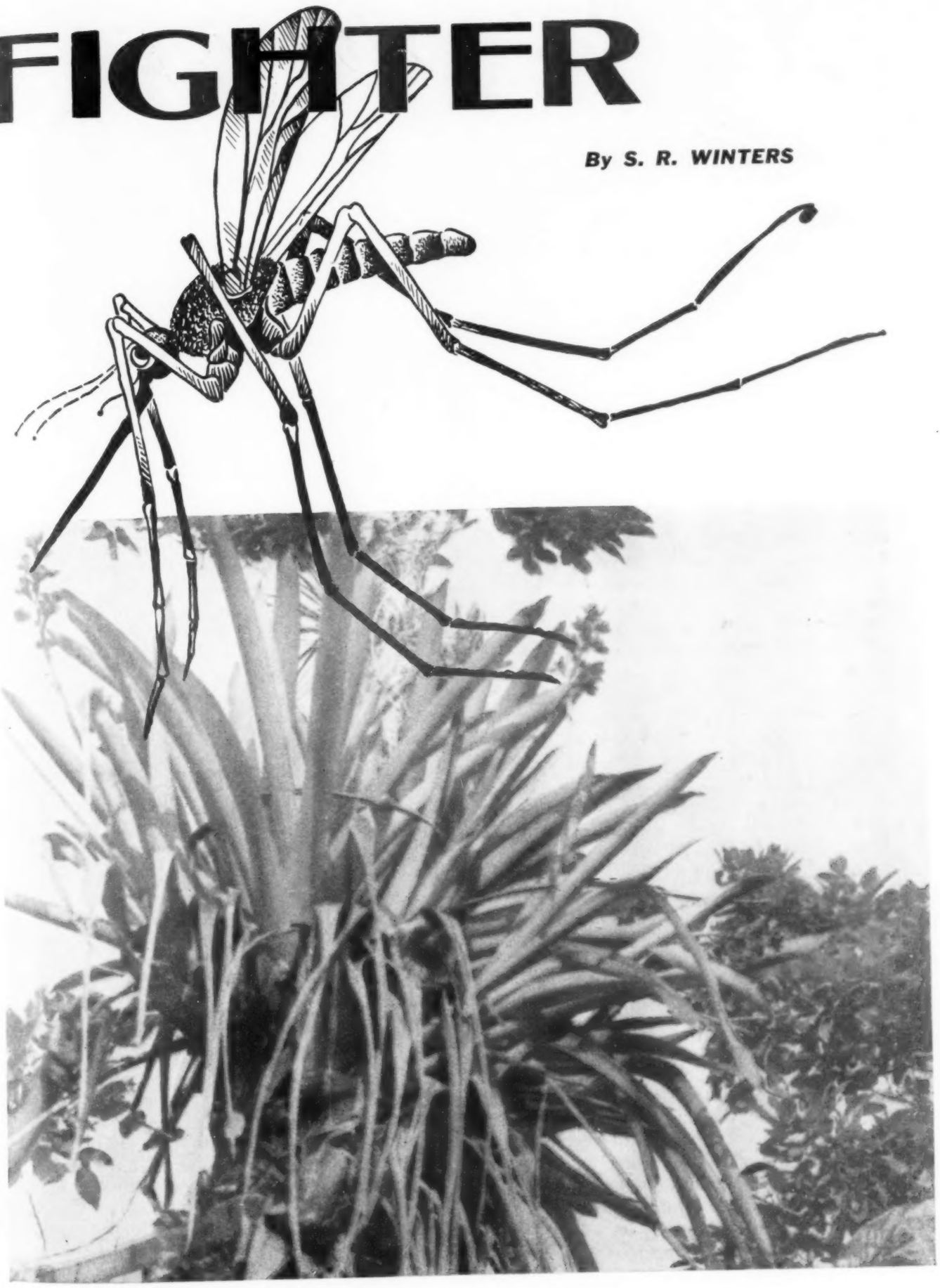
Born in Orange City, Iowa, in 1908, Dr. Rozeboom received his Bachelor of Science degree from Iowa State College in 1931. He came to Johns Hopkins with a student assistantship under the late Dr. F. M. Root, who was one of the foremost authorities on mosquitoes. Dr. Rozeboom received his degree in medical entomology in 1934 and went to Panama City to be associated with the Gorgas Memorial Laboratory. In 1937, he returned to the United States and went to Oklahoma as assistant professor of entomology at Agricultural and Mechanical College, where he remained until 1939. He then returned to Johns Hopkins to take over the duties and office of Dr. Root in the school of hygiene and public health. While he is inclined to minimize his accomplishments in the field of malariology, the fact remains that this young man has performed a service in connection with the continued health of our armed forces in tropical climates that cannot be measured in terms of dollars—or disguised by his modest sense of humor!

In the Spring of 1941, Dr. Rozeboom and his assistant, Raymond L. Laird, went to Trinidad. Since the acquisition of bases in the Caribbean by the United States Army and Navy, medical as well as national interest has centered on this 1,976 square miles of land just northwest of Venezuela and, in particular, on Neotropical Anopheline mosquitoes. There has been no outbreak of malaria among the armed forces stationed in Trinidad, and there will be none, according to Dr. Rozeboom, because the Army and Navy operate on the premise that an ounce of prevention and a lot of research are worth more than a pound of cure. However, in Trinidad, the mosquito suspected as being the carrier of the malaria parasite could not be controlled by the usual methods of drainage or oiling of stagnant waters, for the simple reason that its habits are different from those of other recognized malaria mosquitoes. It does not breed or live in still waters, on the ground, or in grassy pools. It appears to inhabit the jungles and forests, especially those in the cocoa districts of the island.

The story of the increase of *A. bellator* is told in an interesting report by Dr. de Verteuril. Before the nineteenth century, the interior of Trinidad was largely covered with virgin forests, and although *A. bellator* was present, there were relatively few bromeliads in which it could breed, and the mosquito was not especially abundant. Between 1895 and 1905 the jungle gave way to the cocoa planter. Forests were cut down and replaced by cocoa and its shade trees—the immortelles. Intense malarious conditions followed in the communities surrounding the cocoa estates. Under Trinidad's 60 inch annual rainfall, the immortelle trees grew rapidly and became especially favorable for growth *(Continued on page 782)*

# FIGHTER

By S. R. WINTERS



# PREVENTION OF *Allergy* IN CHILDREN

By HERBERT F. JACKSON

EVERY ONE is familiar with the word "allergy." Nearly every one knows that it denotes a condition in which a person is sensitive to something he eats, breathes or touches. It is known that diseases like asthma, chronic bronchitis, hay fever and infantile eczema are manifestations of these reactions. There are, of course, many other minor indications of allergy, such as hives and gastrointestinal upsets from some particular foods.

The purpose of this article is not to discuss the causes or treatments of allergies but to discuss what may be done for the infant or child born into an allergic family to prevent development of these reactions. Unfortunately, in some of these conditions—such as asthma—there may be many causes, some so hidden that they are almost impossible to detect. There are some things to be avoided, however, which have proved injurious in the past and may cause unnecessary suffering on the part of the child.

An allergic family may be defined as one in which there is a history in successive generations of hay fever, asthma or other allergic reactions. Though one member may have only one type of allergy, other members of the same family may show a different manifestation. About 25 per cent of us are allergic—10 per cent with definite symptoms, the other 15 per cent to only a mild degree. Definite symptoms are conditions such as asthma or hay fever, whereas persons with a mild type of allergy may be subject to an attack of hives or giant swelling after eating certain foods. In some cases, violent sneezing may be the only sign; this is recurrent and usually comes at the same time each day. Those who have these mild reactions may later show more definite signs of allergic reaction.

In the effort to prevent allergy, one should start if possible before the baby is born. The expectant mother should avoid excessive intake of any one type of food, and par- *(Continued on page 777)*

*Allergies are not always caused by ragweed pollen. Other things are often found to be guilty.*

A child may be allergic to certain foods: eggs are a common offender.

It may be necessary to get rid of pets — animal furs may be responsible.

The farm child who has the "sniffles" may actually be allergic to feathers.

# TUBERCULOSIS IN OUR SCHOOLS

By J. ARTHUR MYERS
and VIRGINIA L. DUSTIN

SINCE the control of tuberculosis today is largely a matter of education, one would hardly expect to find the disease in educational institutions. It is a fact, however, that tuberculosis makes serious inroads among our educators, from kindergarten through the graduate schools of great universities. Surveys of the personnel of some school systems in the United States reveal in a single examination that from 1 to 2 per cent may have tuberculosis—developed to such a stage that treatment is necessary. It has been estimated that there are approximately 16,000 teachers in the public schools who have tuberculosis which should be treated!

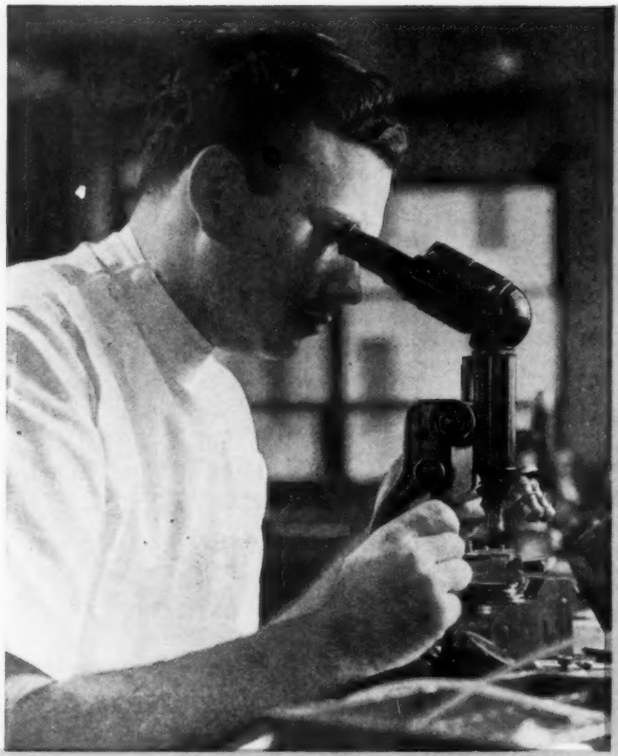
Teachers do not have a different kind of tuberculosis, nor is it necessarily more prevalent among them than among persons in other professions and occupations. Their work, however, brings them in close contact with sizable numbers of students, with their fellow teachers and with other citizens of the community. Because of special training and ability, teachers are called on to participate in numerous community activities. Educators are valuable members of their communities—an important asset to the nation. It is important that they be protected against disease.

Where do teachers contract tuberculosis? Some of them have been infected as infants or children in their own homes, where other members of their families suffered from contagious tuberculosis. Before they even entered college, these teachers were potential cases of the type of tuberculosis that causes illness. Among the older teachers, the majority probably were infected during infancy and childhood; when they were children, almost nothing was done to protect them against either the human or bovine types of tubercle bacilli. The majority of the younger teachers, however, were not infected in their homes or in their local communities, and they entered college without infection. Until about a decade ago, tuberculosis often existed in contagious form among students in many of our colleges and universities, and it was not uncommon for them to transmit it to other students, such as their roommates, sorority sisters and fraternity brothers. There are numerous instances on record of students spreading the disease in this manner. For example, in a medical school fraternity one student had contagious tuberculosis, and within two years six of his fraternity brothers were ill from the same disease! In an academic fraternity, a student with contagious tuberculosis was in close contact with others who lived in the house, and within eleven years, ten of his fraternity brothers had died of the same disease! It has not been at all uncommon for students in teachers' colleges to be found with contagious tuberculosis. Thus many present day teachers obtained tuberculous infections in college. Nevertheless, most of the younger teachers have graduated from college without being infected. The number varies considerably in different parts of the country. In the midwest and west, 70 per cent or more may graduate without infection, whereas in congested eastern states less than 50 per cent may graduate without infection.

Some teachers become infected after entering their life's work through exposure to others who have contagious tuberculosis—unknown to them or to the school authorities. Others have been infected by fellow teachers who knew that they had contagious tuberculosis but kept it a secret; however, this number apparently is not large. Some have been infected by other members of the school personnel, such as those who cook or serve the food, and the engineers or janitors. A few teachers have been infected by children, particularly those of high school age, who have contagious tuberculosis. Still others board or room in homes where contagious tuberculosis exists, and of course there are those *(Continued on page 791)*

***use of the intimate contacts of ci life, tuberculosis among stu- s and teachers is a menace to ic health unless rigid control sures are enforced.***

Century Photos Inc.



Ted Leigh

*Laboratory and field research have disclosed important new facts about infantile paralysis*

# New

**By J. D. RATCLIFF**

BELATEDLY, infantile paralysis is giving ground under concerted attack of science. The Kenny treatment is mercifully mitigating the effect of polio on its victims. More important in the long view, researchers are winning, step by hard-fought step, knowledge of the fundamental nature of the disease—necessary preliminary to conquering it. Research has progressed so far that for the first time, a promising method of attack is outlined.

The account of this work is one of the most heartening medical detective stories of our day. To grasp its importance it is necessary first to review a little polio history. In the thirty years following 1908, research men got one picture firmly fixed in their minds: Polio was a respiratory disease, spread by droplets from the noses of the sick. When these droplets entered the nose of a well person, microbes began working their way along the olfactory nerve—the nerve of smell. Eventually they reached the brain, then entered the spinal cord—destroying nerve tissue as they progressed.

The virus was especially hungry for the motor cells of the gray cord. These are the ones which help control movement of muscles. Hence the name poliomyelitis—Greek for inflammation of the gray matter. We know only too well the end results. When polio virus destroyed a nerve, that nerve could no longer send messages which put muscles to work. The muscle therefore shriveled into uselessness.

Then, in the late '30s a new group of polio research men, with laudable enthusiasm, gave this picture some savage kicks.

If polio were a respiratory disease, they asked, *why* was it prevalent in summer? If the nerve of smell was the portal of entry why wasn't it grossly injured by the infection? And why were the nasal sprays, supposed to block this portal, such dismal failures?

Old theories looked convincing on paper. But in the laboratory and in the rampant tragedy of polio epidemics, they collapsed. Completely new thinking was needed. And that is what a valiant little band of polio fighters have bestowed on the problem.

Backed largely by funds of the National Foundation for Infantile Paralysis—funds collected at celebrations of the President's birthday—they have built a new picture of this disease. One of the first breaks came in 1937. That year Dr. P. H. Harmon, of the University of Chicago, began looking for the polio virus in a new place. Most laboratory workers had attempted to recover the virus from nose and throat washings.

Many, many times they succeeded. But more often they failed. Now, that was strange; if the nose was the sole portal of infection why did they not always find the virus there? Perhaps the nose was not the only gateway for infection? Harmon decided to search for virus in the intestinal discharges of polio

# KNOWLEDGE ABOUT Polio

patients. He succeeded brilliantly. True, three Swedes—Kling, Pettersson and Wernstedt—had made the same discovery in 1912, but they had merely noted it and passed on to other things. It had been forgotten.

Other workers, following Harmon's lead, learned that the polio virus was found in bowel discharge twice as often as in respiratory dropiets.

The next step was to recover the virus, purify it of the bacteria of other diseases, and see whether it would transmit polio. Unless thus treated, the concentrate would kill by transmitting meningitis or a generalized infection before polio could develop—which takes a week or so. Only this year have Craigie, McClure, Paul and Trask succeeded in satisfactorily refining earlier methods. Now they recover a virus which carries polio alone.

Many research workers pushed ahead from the new vantage point. They recovered virus from the stools of children who had suffered no more than a headache and a day or so of sniffles. This was evidence that the disease doesn't necessarily maim or kill. Some children, with high resistance, fight it off unscathed.

This new line of research brought out some striking facts. The virus lingered for weeks or months in the intestines of recovered patients—even those who had the mild attack often diagnosed as flu or grip. During this period, here were potential carriers—polio counterparts of Typhoid Mary.

All this work served to emphasize one point: It looked less and less as if polio was solely a respiratory disease. The new facts seemed to show it was more often an intestinal disease along with dysentery, typhoid and cholera. Interesting and provocative as all this was, it still lacked proof of how polio traveled from person to person.

Drs. James D. Trask and John R. Paul of the Yale University Poliomyelitis Commission took off from this point. For several years this team had worked to prove the existence of abortive polio—the mild attack that goes unrecognized. Thousands of children have it every summer. Trask and Paul followed the trail over the country—to Philadelphia, Los Angeles and other stricken cities—and nailed their case down solidly.

Since polio was present in intestinal discharges they reasoned it should be present in sewage. They hoped it was, because that would be link number two in the chain of evidence that polio was a disease of filth—rather than a disease of sneezes.

Trask was 49—tall, angular, jovial. Paul, 45, was short, quiet, intent. They made a perfect research team—full of the querulous doubts that all good research men must have. They were wondering over this thing when word came that polio had broken out in Charleston, S. C. This was July 1939. Trask and Paul boarded a plane.

From city health officials they got maps of the sewage system; picked spots where they would take samples. They took some of these samples back to New Haven with them and arranged for shipment of others by plane.

Samples of sewage, collected in Charleston in the morning, were in the brains of monkeys in New Haven by late afternoon. The work went along as a routine, looking very much like another of polio's blind alleys. Then one of the monkeys—a little rhesus monkey from India—began to act up. Temperature climbed from a normal 102 degrees Fahrenheit to 105. His head began to quiver—the tremor that goes with polio. Paul and Trask hovered by the cage. Life went out of the monkey's hind legs. He had polio. *(Continued on page 798)*

By TURNER WELLS

# MOBILE OPTICAL SHOPS FOR THE A.E.F.

REALIZING that true vision is vital to victory, the United States Army has added something distinctively new to its mobile battle equipment—a spectacle shop on wheels, designed to be driven within rifle shot of the front lines to repair or replace eyeglasses for soldiers, thereby keeping their eyes keen for action.

This unique, truck-borne optical shop—first of its kind and conceived especially for a field army—is now in an army training area where

*Capt. Joseph R. Harrison fits Sgt. Paul Whittaker with a pair of spectacles in the Army's new mobile optical shop. Captain Harrison heads the new unit.*

**As complete as the average optical shop in the heart of New York City, the unit will provide all the optical needs of 300,000 fighting men.**

**A medical officer inspects the unit's lens-edging machines. Operators can edge 120 lenses daily.**

the crew of eight army optical technicians manning it is receiving special training prior to duty overseas.

As complete as the average optical shop in the heart of New York City, the unit is designed to care for on-the-spot optical needs of a fighting army of 300,000 men, and present plans contemplate building additional units for attachment to each overseas army. The Army estimates that 15 per cent of the men in the armed forces wear glasses.

A brief dip into history explains the reason for the Army's new conception of giving optical service close to the front lines by means of a mobile unit capable of following a battle campaign.

During World War I the Army decided to attach to the A. E. F. an optical unit which was authorized Feb. 25, 1918, under the command of the late Capt. Frank H. Edmonds. Consisting of about thirty men, it arrived in France on May 4, 1918, and was stationed at Neuilly, a suburb of Paris.

Optical units of two men each from the base unit were assigned to base hospitals to make

up glasses on prescriptions issued by hospital doctors. The optical technicians operated from cases in which they carried their frames and lenses.

As the headquarters of this original unit remained stationary, it was impossible to give speedy spectacle service to the soldiers in the field. With this handicap in mind, the present optical unit was designed to be completely mobile so that it can follow a shifting army.

According to Capt. Joseph R. Harrison, commander of the new unit, who possesses the distinction of being the first enlisted man to serve with the original optical shop, most of the "eyeglass casualties" among be-spectacled soldiers in the first World War consisted of the mere loss of their spectacles. During a gas attack when the men had to put on their masks in a hurry, they just tossed their glasses into the mud, an example of understandable haste.

*Captain Harrison and the author discuss a lens-edging problem*

The new mobile optical unit consists of a two and a half ton truck for carrying some $20,000 in optical equipment and machinery, and a one ton trailer for carrying the supplies of the crew and a large tent. The tent will be pitched alongside the truck as a kind of "outpatient department" for soldiers needing attention.

The optical equipment ranges from diamonds for cutting lenses to four mounted emery stones for edging and shaping them. Among other instruments are a drill, axis marker and a lensometer for recreating a prescription from parts of a shattered spectacle lens.

A wide assortment of uncut ground and polished lenses is stocked aboard the truck, sufficient to correct practically all types of eye errors. Arranged in specially constructed cabinets reinforced and padded to withstand the shock of riding over rough terrain are 36,000 single vision lenses, 8,400 frames, 600 pairs of extra temples and 1,200 spectacle cases. A unique inventory control system enables the operators of the unit to maintain their stocks at adequate operating levels; re-orders will be obtained from medical supply depots.

Each soldier who wears glasses will have a copy of his prescription attached to his service record at the headquarters of his respective organization. As he needs glasses, he applies to headquarters for the necessary authorization, after which the optical unit swings into action.

The operators of the unit will be able to edge and mount 120 single lenses daily—sufficient for the average requirements of a field army of 300,000 men. The operators are to do only the technical work of preparing the glasses, while the professional ophthalmic services of examining, refracting and prescribing will be handled by Army doctors.

The mobile optical unit was designed and built by the American Optical Company at the request of and with suggestions from the Surgeon General's office.

With such mobile equipment accompanying our armed forces, the parents of this nation can be assured that the eyesight of their sons will be properly cared for at all times.

# "Sa-ay! Vitamins and Minerals sure are Good!"

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- All baby knows is that he loves Clapp's Strained Foods—and that's a lot! But his doctor knows that all Clapp's Foods are made according to doctors' orders—to supply the nutritive essentials that babies need.
- Clapp's Strained Foods are so smoothly strained that a young baby manages them easily, yet they are solid enough to be a real advance over a liquid diet.
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## CLAPP'S STRAINED FOODS

**CLAPP'S JUNIOR FOODS • CLAPP'S PRE-COOKED CEREALS**

# He looks well... he feels well

## *But his wise parents are taking no chances*

JUST A FEW DAYS after an acute attack of rheumatic fever, a child may act well and look well. Yet it may be necessary for the doctor to keep close watch over the child for a prolonged period.

That is why the doctor may advise rest in bed for *weeks*—in severe cases, for months. This caution is necessary because, during the acute stage of the disease, the heart is almost always involved. *Acute rheumatic fever takes the lives of more children between the ages of five and fifteen than any other disease.*

Sometimes, if the attack is mild or unrecognized, its serious consequences may not become apparent until adult years. Many cases of heart disease in adults may be traced to childhood attacks of rheumatic fever.

The onset of the disease is often preceded by a sore throat, tonsillitis, or cold. Earliest indications may be slight fever, nose bleeds, poor appetite, failure to gain weight, rapid heart action, and rheumatic pains—often fleeting and slight—in muscles and joints.

Other symptoms may be nodules under the skin, a rash, painful and inflamed joints and high fever. Chorea, or St. Vitus dance, may be a sign of rheumatic fever. Symptoms are sometimes so indefinite that even the doctor may be unable to make an immediate diagnosis.

A child who has once had rheumatic fever should be carefully guarded from colds and nose or throat infections. Should these occur, no matter how slight, he should be put to bed and the doctor called. An initial attack is often followed by future attacks which greatly increase the danger of permanent heart damage.

Nutritious food, cleanliness, fresh air and medical supervision are the best safeguards against recurrences of rheumatic fever. They are also the best preventive measures against initial attacks—wise precautions to adopt for the protection of school-age children.

To learn more about rheumatic heart disease, send for Metropolitan's free pamphlet, 102-Z, "About Rheumatic Fever."

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## Feast for the Eyes

*(Continued from page 745)*

medical profession to convey to the general public a knowledge as scientifically dependable as the established facts will justify.

It is especially important to emphasize the well known principles of a balanced diet. The diet should not be confined entirely to staple articles providing carbohydrates, fats and proteins but should include a variety of foods selected from the animal and vegetable kingdoms so that the essential vitamins will be contained in the menus of everyday life. This kind of regime will increase the appetite, promote the process of digestion and embrace all the factors necessary to growth and sustained activity.

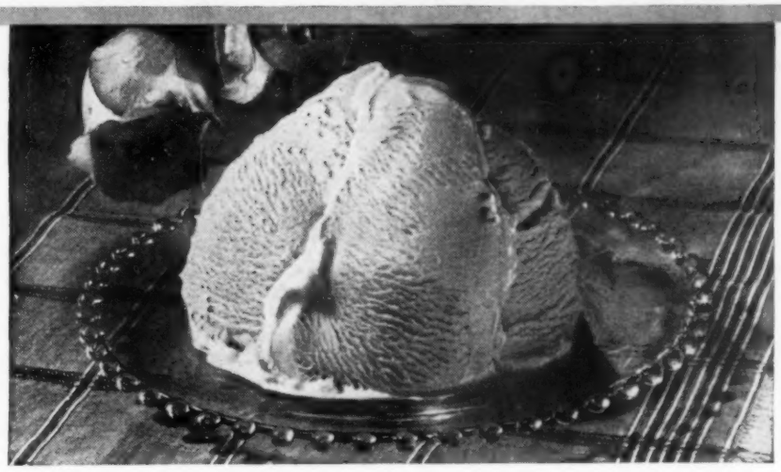
Variation, and not monotony, is the key to the modern diet. The truth of this principle is abundantly illustrated in the marked prevalence of certain ocular disorders such as trachoma and cataract which predominate in India, China, Egypt and Palestine. Especially is this true among poor and improperly nourished populations where only elementary foods like rice, corn or fish are available.

Another striking deficiency to be observed in many of these countries is the inadequate supply of wholesome drinking water. An abundant supply of safe and palatable drinking water is necessary for health. This universal solvent is necessary for the proper digestion of foods and for the prompt and efficacious elimination of waste products which would otherwise accumulate, producing toxins capable of the most serious consequences to the general system and therefore to the eyes as well.

The influence of foods on eye conditions must in the very nature of things operate through the general system. A properly balanced diet outlined by an intelligent family physician will give the best quality of blood to the tissues and will result in a supply of the highest grade of nutritious lymph for the eyes.

# Wartime Nutrition

## GIVES ICE CREAM AN ENTIRELY NEW STANDING!



***Always known as "America's favorite treat," ice cream is recognized today as a valuable food which is contributing importantly to our program of wartime nutrition.***

Just what does Sealtest Ice Cream contribute to good nutrition?

1. Made with pure, high-quality Sealtest Milk and Cream, it contains the essential minerals and vitamins of these basic foods, although the proportions differ.
2. It is a recognized energy food—yet supplies relatively few "calories" in proportion to the amounts of minerals and vitamins it adds to the diet.
3. It has the utmost in *taste* appeal and *eye* appeal—all of which contributes to good digestion and to the pleasure of eating.

The purity and quality of Sealtest Ice Cream are scientifically controlled by the Sealtest System of Laboratory Protection. Sealtest Laboratory workers are "on guard" in every Sealtest Ice Cream plant.

So, when you suggest Sealtest Ice Cream, you are recommending a delicious food—a nourishing food—and a scientifically safeguarded food. It is sold by leading dairy companies in thousands of communities.

*TUNE IN THE SEALTEST PROGRAM, THURSDAY EVENINGS, NBC NETWORK*

Sealtest

Sealtest System — National Dairy Products Corporation

ICE CREAM

**America's favorite dairy-food**

*Sealtest, Inc. and its member-companies are subsidiaries of National Dairy Products Corporation*

Acme

# BUTTER or GUNS?

**TO SAVE VALUABLE FATS**

| PLAN THIS MENU | INSTEAD OF THIS ONE |
|---|---|
| Broiled meat cakes | Fried meat cakes |
| Mashed potatoes | French fried potatoes |
| Creamed peas | Buttered peas |
| Brown bread and butter | Brown bread and butter |
| Lettuce with mayonnaise | Lettuce with salad dressing |
| Custard and plain cookies | Custard pie |

***By MARY C. BROWN***

EVERY FARMER is working night and day to produce animal and vegetable fats in every section of our country. Every food company has the same answers to my questions: "Yes, of course we are using domestic fats, and they are just as good—even better—than imported fats. They make excellent food products."

The National Salvage Campaign, started in July, includes the collection of all fats in the kitchen grease which would otherwise go into the waste can. As announced, these waste fats must be melted, strained through cloth into a tin can, kept in the refrigerator and turned in before they become rancid. Any kitchen fat should be salvaged, regardless of flavor, including mutton or goosedrippings and the fat used to fry fish.

We all are anxious to cooperate in the war effort in every way possible. We shall gladly make any necessary change in our buying habits when shortages develop, and we shall follow instructions as to the proper storage and utilization of the fats we buy. Our diet need not suffer unless the war situation becomes much worse than it is now. Here are some of the ways we can save valuable fats and thus do our bit to prevent further shortages from developing:

We can plan our meals as far as possible to include the minimum amount of fats in their preparation, following the suggestions indicated in the dinner menus shown on this page. Practically the only difference in the two menus is in the amount of fat required in their preparation.

When we eat in a restaurant, we can:

1. Take one pat of butter instead of two.

2. Eat *all* the butter we take.

3. Avoid potato chips, which are 37 per cent fat.

4. Choose salad dressing instead of mayonnaise or French dressing.

5. Order fruit or custard instead of pastry for dessert.

With a little thought, we can eliminate some fats from our menus without loss. For example, let's compare a 3 inch piece of a 9 inch apple pie with a dish of applesauce containing three eighths of a cupful. The pie furnishes 272 calories, 3.1 grams of protein, 9.8 grams of fat and 42.8 grams of carbohydrate. The sauce furnishes 157 calories, 0.2 gram of protein, 0.8 gram of fat and 37.2 grams of carbohydrate. They weigh about the same—100 grams in each portion.

If you like pie particularly well, perhaps you would prefer to find some other way to conserve fat, but this is a good example of a change in menu which can be sanctioned from the nutritional standpoint.

### FATS ARE CONCENTRATED FOOD

Fat has a higher energy value per unit of weight than any other foodstuff. Fat has a physiologic value of 9 calories per gram. In comparison, carbohydrate has a physiologic value of 4 calories per gram, and protein has the same value.

"Fats are a more concentrated form of fuel, or a more compact and lighter medium for storage of energy for future use," says Sherman. "There is now abundant evidence that the animal body synthesizes fat from carbohydrate." Thus increased consumption of cereals and bread will substitute for fats to some extent.

The opinion of the Council on Foods of the American Medical

# *It Shall Not Happen Here!*

In countries less richly endowed, where standards of living have not reached American levels, where transportation and distribution have not reached America's development, war always has led to pitiable civilian hardships. Malnutrition in its severest form, and the diseases springing from it, have always been the accompaniment and the aftermath of war.

It shall not happen here! America's enormous productivity will fulfill the promise of ample food for every reasonable demand. American genius for distribution will always make food available in every section of the country. And the wisdom of American womanhood—the world's best homemakers—is in itself the assurance that the all-important subject of adequate nutrition for everyone in America will not be neglected.

Adequate nutrition calls for well-balanced meals, providing all the nutritional essentials for buoyant health, maximum energy and efficiency, and greater resistance to disease.

In such meals meat fills an important place. It is man's richest protein food, providing proteins of the highest biologic quality. It is a good source of the essential B vitamins, and the minerals iron, copper, phosphorus. Since these nutritional essentials are not stored in the body to any appreciable extent, meat renders a real service in helping to supply them regularly.

Meat is the centerpoint of the truly American meal. Serve it in ample amounts.

Due to the problems of war not every cut may be available every day everywhere. Choose from the kinds and cuts that are available.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

*The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.*

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THIS TOMATO JUICE IS NEVER THIN OR WATERY
Always drink Kemp's Sun-Rayed—the pure, undiluted juice of WHOLE tomatoes. Delicious. The Sun-Rayed Co., Frankfort, Indiana.

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AMERICAN MEDICAL ASSOCIATION
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Association is that "The proportion of fat considered desirable in the diet varies with conditions. During adolescence and under conditions of hard labor, fat is valuable because its high fuel value helps to provide the large amount of necessary energy without overburdening the capacity of the stomach."

"The more fat a meal contains, the longer time before it will have left the stomach, other things being equal," says one authority, adding that "it is when the stomach is empty that the muscular contractions of its walls give rise to the 'pangs' of hunger . . . hence the art of dietetics tends to furnish from one fourth to one third of the total food calories in the form of fat."

As a rule, much less fat than this is unsatisfactory. Without fat, it is hard to get good texture in cakes and bread and other desired cookery results. On the other hand, too large a proportion of fat in meals is not well liked, except by active laborers.

The United States Department of Agriculture gives suggested diet plans for different income levels. These call for a yearly per capita consumption of 45 pounds of fats (including butter, oils, bacon and salt pork) as the suggested minimum and 52 pounds as the highest amount.

### DIGESTIBILITY

Often, we hear discussions of "digestibility" in connection with fats. Actually fat is digested more slowly than most other foods. Hence a feeling of hunger is delayed longer than usual following a meal rich in fats. The next common question, "How complete is the digestion of fat?" is answered by the Council on Foods and Nutrition: "With the ordinary mixed diet it is customary to assume that the normal person utilizes about 95 per cent of the fat of food. Digestibility of the various fats ranges from 94 per cent to 98 per cent."

Normal people need some fat in their food every day. Fat deficiency has been studied, and it has been shown that the different fatty acids found in the fats should not be thought of as being interchangeable, because deficiencies of different ones will show differences in the skin or in the eyes, or in growth. It is a common observation that a woman who suddenly decides to become slim and quits eating will have a dry skin that resembles the surface of the skin of experimental animals fed on diets deficient in fat. All the fats must be supplied by foods.

### VITAMIN A

Butter is valued highly for its vitamin A, but the value will vary from 15 International Units to the gram for winter butter to about 27 International Units to the gram for summer butter, averaging 20 Units to the gram. The difference develops from the fact cows are generally on pasture in the summer and stall fed in winter.

Lard and corn oil may contain traces of vitamin A. Oleo oil, which includes the fat from around the heart of beef, contains small amounts of vitamin A, and California olive oil may contain a small amount.

Vitamin A, needed for growth and development, is abundant in butterfat and egg yolk—where it was provided to nourish the young calf and chicken. A recent ruling of the Federal Food and Drug Administration requires that, if oleomargarine is fortified with vitamin A, the amount shall be not less than 9,000 Units of vitamin A per pound of oleomargarine.

Green leaves, such as kale, spinach and turnip greens, have a high vitamin A value. Other vegetables which have a comparatively high vitamin A value are carrots, sweet potatoes, broccoli, cabbage, swiss chard and green peas. Liver is also useful for this vitamin. Thus the diet need not suffer for lack of vitamin A simply because fats are reduced.

### OTHER VITAMINS IN FATS

Butter contains some vitamin D, the amount depending largely on the cow's feed and the extent to which she is exposed to sunshine. The amount of vitamin D, however, is slight at best. Oleomargarine fortified with vitamin A also contains some vitamin D. However, the fats cannot be depended on to furnish enough vitamin D. Other sources, such as cod liver oil and vitamin D fortified or irradiated foods, should be eaten. Vitamins E and K are also found in fats and oils.

The National Nutrition Conference designated that butter or fortified oleomargarine be included in

# MAKE SURE YOUR BABY'S FOOD TASTES GOOD!

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**When baby is ready** for strained foods, give him *Heinz!* Choice fruits, vegetables, meats and cereals are cooked scientifically—vacuum-packed in enamel-lined containers. Vitamins and minerals your youngster needs for health and growth are retained in high degree. Tempting flavors and colors are also captured! There are 17 savory kinds for you and your baby to choose from!

**Bridge the gap** between strained foods and family meals with Heinz 12 Junior Foods! They're designed to furnish runabout babies with unstrained, mildly seasoned and highly nutritive foods. Prepared to special recipes and packed in protective enamel-lined containers, Heinz Junior Foods include main dishes, vegetables and desserts—every one a joy to toddlers!

THESE TWO SEALS MEAN PROTECTION 57 FOR YOUR BABY

## HEINZ BABY FOODS

BACKED BY A 73-YEAR QUALITY REPUTATION

the dietary pattern to meet the recommended allowances, and that enough fat and sugar should be included to complete the required number of calories after other necessary foods have been provided.

### FATS MUST BE FRESH

Rancidity in fats may be accompanied by the destruction of vitamin A. Air and light should be excluded from the package of fat, and for some fats refrigeration is necessary. Some of the hydrogenated vegetable fats keep fresh remarkably well, even when the can has been opened and they are not refrigerated. Butter has recently been mixed with oat flour and canned to ship abroad without refrigeration. The various edible oils and fats can be hardened by hydrogenation to any desired consistency.

The consistency of the fat has an effect on the cookery result. Semisolid fats and hard fats improve bread volumes and texture. Hard fats, usually made much harder by chilling, will give the desired flakiness to pastry. The fat is cut into small bits in the flour. A cake will have a finer grain, more tender crumb and higher volume if air is whipped into the shortening at the time it is creamed with the sugar. Enough sugar should be used to give a light, fluffy mixture before syrup and eggs are added.

Flavor is the most desirable attribute of a fat used to season vegetables, gravy or a pudding sauce. Butter is the favorite for this purpose, and it is most effective when added after the food is removed from the stove, since the delicate flavor and odor are volatile and will evaporate when heated or cooked. Oleomargarine is used in a similar manner. Bacon fat is popular for flavoring vegetables and main course dishes. Fat pork is used for seasoning.

A high smoking temperature is the most valuable attribute of a fat used for deep fat frying. A thermometer should be used, and the fat should not be allowed to heat above 425 degrees F. Fats which have a low smoking temperature are satisfactory for pan frying, where the heat can be controlled. Cooked potatoes may be browned quickly in butter without too much loss of the butter flavor. Fat should never be heated until it smokes, because when you see or smell smoke, you know that slight burning has occurred. This impairs the flavor and is a disadvantage from the nutrition standpoint. The fat of fried food, if not burned or even scorched, is as well digested and absorbed as are equal amounts of similarly combined fat and carbohydrate.

An inexperienced cook does not realize that fat should never smoke. When a recipe calls for "melted fat," you should melt it in a double boiler to avoid scorching, then pour it into the measuring cup or spoon. Stir butter as it melts and remove it from the heat immediately to conserve the flavor.

With the exception of the salad and cooking oils, most of the fats are churned, whipped or stirred in manufacture in order to improve their consistency, make them easier to handle and give better cooking and baking results.

According to federal definition, butter must contain 80 per cent of milk fat. The remainder is water, salt and milk solids not fat. It is not required that the addition of coloring be declared on the label. Lard and some of the other fats

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contain water, although many of them are practically 100 per cent fat. The federal definition of oleomargarine requires that the fat content be not less than 80 per cent. The label must tell whether it is churned from animal or vegetable fat. Three possible labels for lard are "pure lard," "refined and hydrogenated lard," and "pure lard, beef fat added." All salad and cooking oils must be accurately labeled so that the consumer will know whether it is corn oil, cottonseed, peanut or soybean oil. One of the best possible assurances you can have that the label is accurate and the fat meets proper nutritional requirements is the presence of the seal of acceptance of the Council on Foods of the American Medical Association.

### HOW TO CLARIFY FAT

Meat fat which has not been scorched may be used for shortening in cakes, biscuits, cornbread and muffins. The roasting of meat should be carried on at a comparatively low temperature (325 degrees F.) to avoid excessive shrinkage in the number of available servings and excess pan drippings.

To clarify this fat, add boiling water, stir thoroughly until the fat and water are well mixed and pour through muslin or several thicknesses of cheesecloth. Chill the mixture and remove the fat by scraping off the thin layer which rests on the water. Chicken fat is suitable for cakes, and the strongly flavored fats are suitable in cornbread.

To recondition frying fat, heat until melted and strain through muslin. Then add a sliced potato to the cold fat. Heat gradually and let the potato fry slightly; it will absorb fish odor or other odors from the fat. Frying fat which has been scorched or burned should be discarded. To melt fat from fat meat, you can cut fat pork, suet or other fat free of the lean meat, place it in a slow oven (250 degrees F.). Strain through muslin and store it in the refrigerator. To pan-broil meats if an oven broiler is not available, heat a skillet sizzling hot —as hot as possible without warping the skillet. Rub it quickly with a piece of suet. Then put the meat in the pan and sprinkle it with salt and pepper. Keep the fire very hot and cook the other side of the meat. If the fire is not

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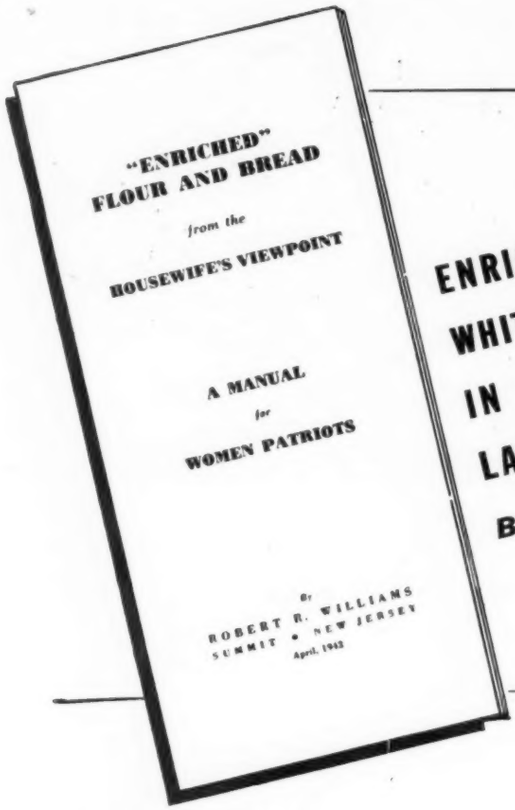


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H-10


**FATS AND OILS CLASSIFIED**

**TABLE FATS**

Butter
Salad oil
Oleomargarine
Other foods high in fat:
- Mayonnaise
- French Dressing
- Cheese
- Cream
- Egg yolk
- Peanut butter
- Avocados
- Bacon and fat meats

**COOKING FATS**

Lard
Hydrogenated lard
Vegetable oil
Hydrogenated vegetable oils
Blended shortening
Table fats

hot enough, the meat juices will cook out, and the method will not be satisfactory. This method is suited to sirloin steak, patties of ground round steak and beef liver. It is not suitable for pork or meats that require long cooking.

To use fats as a protective coating: pour melted lard over a jar of ground sausage meat to protect it from exposure to the air and oxidation. Brush the surface of steak or other meat with salad oil or melted cooking fat to protect the surface from drying out while the meat is in the refrigerator. Coat baking pans with fat to keep baked food from sticking to the pan. Use a tasteless cooking fat or oil. Cover the surface of cured ham or cheese with melted fat to prevent molding of the surface if it is not refrigerated, or drying in the refrigerator.

## COLOR FROM COPPER

In HYGEIA for April 1942, the following statement appeared in the answer to an inquiry addressed to the Questions and Answers department: "In some cases so much copper sulfate has been added to canned vegetables that one can of peas, for instance, will contain as much as 2½ grams of this salt. This amount of copper would be harmful."

Actually, the practice of adding copper sulfate to canned foods has long been obsolete and is, in fact, illegal under federal and state food laws. Most manufacturers do everything they can to avoid the use of copper in order to prevent this artificial greening.

# "Toothbrushes are Essential to National Health

More than half of the people of America do not possess one. To be well and keep well, every American should have a good toothbrush and use it regularly."

*DR. MORRIS FISHBEIN*
*Editor of HYGEIA, published by The American Medical Association*

The above quotation by Dr. Morris Fishbein concurs with what the makers of Dr. West's Miracle-Tuft Tooth Brush long have advocated.

THIS IS WHAT I'D DO IF I HAD TO WEAR SCRATCHY SHIRTS— I'D HOLLER!
JEAN
BUT OUR MUMMY'S WISE— SHE KEEPS SHIRTS SOFT WITH LUX
JIMMY
THAT MAKES US HAPPY. SHE SAYS IT SAVES MONEY, TOO!
JOAN
TRIPLETS' mother finds LUX "tops"
"Triplets mean triple washing—from shirts to sweaters," says Mrs. Joseph Finnell—"but baby things come out of Lux suds soft and sweet and clean. I wouldn't risk spoiling them with strong washday soaps or cake-soap rubbing.
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New Quick Lux is thrifty—see how much one box will do!
LUX
For all fine

# Choosing Your Child

(Continued from page 743)

one could be sure that the child would never discover the truth, perhaps the answer would have to be modified. But one cannot be sure of this.

Weighing all the considerations, most psychologists believe that there is little possible good to come from keeping the truth from the child. Probably the only real advantage to him would be that if he doesn't know he won't tell others, and there will then be fewer acts of stupidity and ignorance committed by people who assume the role of uninvited experts on matters pertaining to adoptive relationships. People won't then tell the child, as a neighbor woman cruelly told my adopted twin daughters when they were 6 years old: "Your daddy isn't your real daddy at all—not in the sight of God, at least!" Nor, if the child plays truant from school some fine day and gets lost in the woods, as any normal and healthy boy is apt to do, will his adoptive parents be insulted as I was with the ignorant declaration: "Your son was unconsciously seeking an escape from an intolerable situation in your home because of the foster relationship."

All things considered, it usually is far better to tell the child that he is adopted. And the sooner the better. If he is very young and if the situation is handled skilfully, it will seem perfectly natural to him, for he has little or no remembrance of any other relationship. If he is older, he probably can't be fooled anyway. Probably he should be told between the ages of 3 and 6 years. Perhaps the cruelest of all procedures is to deceive the child until he becomes old enough to have attached a meaning to the concept of his assumed biologic relationship and then to disillusion him. This way of handling the matter is certainly guaranteed to make him wonder why he was so deceived, destroy the sense of security he had built and fill him with all kinds of doubts and heartbreaking fears. To realize this, one needs merely to look back to his own childhood and ask what the effect would have been if he had suddenly discovered that his parents were not really his "own." The point is that having naturally attributed much of our place in the home to the supposedly natural relationship with our parents, none of us could have withstood such a shock without a tremendous sense of loss.

How should the child be told? Here is the opportunity for intelligent parents; the time-worn device is still a good one: "You have something to be proud of—something that few children can claim," the parent may say, "for you didn't just happen along like a lot of children who may or may not have been wanted. We actually picked you because you were the one we really wanted."

For the parents who wish to treat the matter more casually: "You know, a lot of parents plan the kind of baby they want. Then they start its growth and trust to luck. Well, when it comes, it doesn't look like what they ordered at all. It's wrinkled and red-faced and mostly ears or mouth. But what can they do about it? They just have to be good sports and pretend that there never was such a perfectly beautiful baby before. But that's what happens to folks who have to order sight-unseen. Now, in your case, we saw a lot of children. We looked them over and suddenly we actually saw just exactly what we wanted—right size, right sex, right sound and everything! So we took you, because we loved you and needed you. We could have had our choice of just hundreds of children, but you were just what we wanted. So, the fact that you weren't ours right at first gave us a chance to choose. That's why we—and you—have something to be especially proud of."

After an understanding has been built between the parents and an adopted child, little need be said about the matter. The child will

normally take the whole thing as a matter of course. If he has no remembrance of any other relationship with the parents, he will seldom give much thought to the matter. Unless he asks questions, it probably is best almost never to mention it to him; when the reference is inescapable it should be in a most natural and casual manner. If mentioned only at a time when the feeling and evidence of parental love for him is strongest, the adoptive relationship can actually come to be something of especial pride to him. The importance of this point can scarcely be overstressed; it seems probable that its observation is one of the best measures of the fitness of adoptive parents for their task.

Finally, prospective adoptive parents want to know whether a child should be adopted in earliest infancy, or later.

If one considers only the psychologic benefit of the individual child, then the answer is certainly that he should be adopted as young as possible. Proper training should begin almost at the time of his birth.

But there are other considerations which call for the most grave attention. Homes for dependent children are overcrowded with applications by people who want to adopt babies. Thousands of these applications can never be filled. There simply aren't enough young babies who meet the requirements. If, therefore, one wishes to consider the welfare of all the nation's dependent children, it would seem that a plea might be entered here for the adoption of some who have passed from infancy and otherwise would have little hope of ever securing normal home life.

Sometimes a dependent child has had a good home and good training. In such cases, the mere fact that it has not been *your* training may be of secondary importance when compared with the possible good to come to the child.

While it is true that young children are easily harmed by emotional crises such as a change in homes might occasion, it is likewise true that, under good guidance, they frequently make excellent recovery. And after all, if every one insists on having only very young children, then many homes must remain childless, and many children homeless.

## JUST AN OLD METAL TUBE

Who'd have thought a year ago that an old metal tube would be as important as it is today? Remember how we used to throw them away? Come to think of it, we were rather wasteful in more ways than one, weren't we? Today metal is vital; it is needed to produce our implements of Victory — guns, tanks, jeeps, aircraft, munitions . . . — Today you cannot buy a tube of shaving cream or toothpaste without turning in an old tube. When this conservation order was proclaimed there were the usual few persons who griped about it. But then there are always a few *"gripers"* on hand—you know, sourpusses who complain about everything, blame everybody but themselves, and contribute absolutely nothing to the common good. Come to think of it, though, it's perhaps a good thing we have such persons; they serve as a comparison by which we can appreciate the simple greatness, the kindness and ruggedness and good humor of the average American, who uncomplainingly shoulders his country's burdens, jokes about the effect on himself of the rationing of foodstuffs and gasoline and rubber, and has his own unprintable opinion of *Hoarders* and *Gripers* . . . — Funny, but an old metal tube has almost become a symbol of our national character. Every day hundreds of thousands of persons turn in old metal tubes, and in the aggregate these tubes represent a considerable quantity of metal—not only metal in the literal sense, but figuratively the mettle of a people who know that the winning of this war depends on every single one of us contributing his full share, even though it be just an old metal tube.

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# QUESTIONS AND *Answers*

### Saccharin for Sugar

*To the Editor:*—I am interested in knowing about the advisability of using saccharin in place of sugar for table use as well as in canning. M. W., Illinois.

*Answer.*—The sweetening power of saccharin is between three hundred and five hundred times that of sugar. It is used to some extent in diabetic diets and other diets in which carbohydrates are restricted. It appears that small quantities taken daily, even over long periods, are harmless. The Council on Foods and Nutrition of the American Medical Association, at its recent annual meeting, stated:

"This question has come to the fore again because of restrictions on the use of sugar. Saccharin is not a food, and it is excreted unchanged. Small doses appear to produce no ill effects, but larger doses such as 1.5 Gm. daily may cause gastrointestinal disturbances. It is hardly likely that this much saccharin ever would be consumed in one day, because on the basis of sweetness it would be equivalent to 1½ pounds of sugar. The Council on Foods and Nutrition reiterates its views that indiscriminate use of saccharin is not advisable and that its presence in any food product should be clearly indicated to customers."

The Bureau of Home Economics, Washington, D. C., has conducted some research on the use of saccharin in foods and reports that saccharin cannot be used satisfactorily in foods which subsequently are heated because under such conditions saccharin often acquires a bitter flavor. For this reason it would appear that saccharin may not be used as a satisfactory substitute for sugar in canned fruits unless the saccharin is added at the time the fruit is served.

Persons who do not now use saccharin might well avoid taking up the practice except when advised by their physicians.

### Lipstick

*To the Editor:*—Please tell me what ill effects, if any, result from the continued use of lipstick. I have been told that it can result in dry and cracked lips in later years if used constantly when young. C. W., California.

*Answer.*—Dermatitis or inflammation of the lips sometimes results from the use of lipstick; however, this is usually due to individual sensitization to some ingredient of the lipstick and not necessarily to its prolonged use.

Unless such inflammation occurs, no ill-effect is apt to follow in later years from the use of lipstick in youth, and even when such inflammation develops, it usually disappears without any prolonged ill-effect when use of the lipstick is discontinued and proper treatment of the dermatitis it produced is undertaken.

### Foreign Body in the Eye

*To the Editor:*—I would appreciate information on the probable effect of a piece of emery from an emery wheel lodged in an individual's eye. Particularly am I interested in knowing if the average case of this type could result in the loss of the eye. Is it not likely that the normal flow of tears from the eye would dissolve such a foreign matter and thus rapidly relieve the irritation and distress? M. S., Ohio.

*Answer.*—Your question involves so many possibilities that a direct answer is extremely difficult.

In the first place, the average piece of emery becomes imbedded in the cornea and does not come to rest within the eyeball proper. If by any chance a piece of emery struck the eye with sufficient force to penetrate to the interior of the eyeball, the loss of that eye could be attributed directly to the accident.

On the other hand, the average piece of emery lodges in the cornea, where it produces intensive irritation, not only because of the form of the body itself, but even more because of the tissue that is charred by the emery as it strikes the eye. If the emery and the charred tissue are removed, and no infection results, the loss of the eye could not be attributed to the accident. On the other hand if the area that was struck by the emery became infected with a resultant corneal ulcer, that ulcer could easily cause the loss of the eyeball, and could be attributed directly to the emery.

If the emery were lodged only lightly on the cornea and produced no charring of corneal tissue, it could easily be dislodged by the normal movements of the eyelid over the eyeball, after which the irritation and the distress would disappear rapidly. The tears would play little if any role in this process.

### Weird "Remedies"

*To the Editor:*—What use do the Chinese make of the gallstones of domestic cattle? I have heard that during normal times they pay several dollars an ounce for them. J. M. B., Illinois.

*Answer.*—When a Western practitioner of medicine visits a Chinese old-style drug store, he is faced by an array of the most curious remedies, whose uses he cannot fathom: powdered deer's horn, tiger's whiskers, ground fish bones, oyster shells, dried bamboo juice, cicadee skins, pounded fossils—and gallstones. He gets the impression that there is a general belief among the Chinese that almost anything weird is curative. He sees pills, some as big as pigeons' eggs. Apparently, the bigger the pill, the more efficacious it is!

There is another interesting aspect of their use of gallstones as a "cure." Why don't the Chinese

# "SOUND THE ALERT, SIS!

## Eyestrain time is here!"

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*Use shades with white linings!*

Dark lamp shades or shades now turned yellow inside rob your eyes of light they need . . . may cut down the light as much as 50%. Clean or brush shades regularly; or if they're too bad, replace with fresh ones.

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1. Be sure it is the right size to guard your eyes from strain.
2. Be sure it is marked G-E . . .

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# GENERAL ELECTRIC

use gallstones from their own slaughtered animals? One physician working in China tells of an experience he had many years ago when he was advocating the use of more cow's milk for infants. An old Chinese gentleman told him: "It is different in your country, where you have much land and few people. We Chinese know that to feed a cow requires as much land as is required to sustain eight mouths. Not having that many mouths, you can raise cows. But here in China we already have the eight mouths, and therefore we do not have the cow." Not having such large numbers of animals in China for slaughter, and for securing gallstones, the Chinese buy gallstones in the United States and South America.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

# Making an Occupied Bed

(*Continued from page 739*)

Then roll the rubber sheet up against patient in the same way, tucking it well under the roll made in the draw sheet. Also roll the bottom sheet up against the patient, tuck it under the rubber sheet and keep the roll even at the top and foot of the bed.

Place the top sheet you have just removed from over the patient on the bed. Smooth this sheet into place on the left half of the bed, tuck it under the mattress at the top, miter the upper left corner and tuck the sheet under the side of the mattress for the entire length of the bed. Keep the right half of the sheet rolled evenly against the roll made in the foundation sheet being removed (fig. 2).

Bring the rubber sheet back into place across the bed and tuck it under the mattress. Place a clean draw sheet over the rubber sheet, tucking it in at the side of the mattress. Keep the right half of the draw sheet rolled well up against the patient. Then turn the patient on to his right side, over to the left half of the bed, and go to the opposite side of the bed.

Remove the soiled draw sheet and place it in the linen bag (fig. 3). Loosen the rubber sheet, roll it up and tuck it under the roll made in the clean draw sheet from the other side of the bed. Remove the soiled foundation sheet, fold it loosely together and place it in the linen bag.

Draw the clean foundation sheet into position. Tighten the sheet by pulling at the upper, middle and lower thirds, so that the sheet is made tight underneath the patient. If it is pulled tightly enough, the patient will be moved back slightly in the bed as the sheet is made taut. Holding the sheet tightly, miter the upper right corner and tuck the sheet in under the side of the mattress for the entire length of the bed. Then draw the rubber sheet into position and tuck it under the side of the mattress. Pull the draw sheet tightly across the bed (upper, middle and lower thirds) and tuck it under the mattress.

Now turn the patient on his back and place the top sheet, wrong side up, over him. Never place covers over the patient's face. Fold the sheet down at the top approximately 8 inches and place the fold directly under the patient's chin.

Remove the bath blanket from under the sheet. Arrange the top sheet on the bed as though you were making an empty bed; keep the sheet folded under the patient's chin. Place the blanket on the bed as in making an empty bed. Place the spread on the bed, the upper 8 inches turned under the blanket and the top sheet folded over the spread and blanket (fig. 4).

Put a clean pillow case on the pillow and replace it under the patient's head. When the top covers are in place, go to the foot of the bed, grasp the top covers (sheet, blanket and spread) in both hands just above patient's feet and then gently pull downward from the top of the bed just enough to loosen the covers across the feet. Be sure not to pull hard enough to loosen the mitered corners at the foot of the bed. Remove the linen bag from the back of the chair and see that room is in order.

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## Fatigue: Saboteur

(Continued from page 741)

women stopped work every three months, largely because of ill health, and had to be replaced. Of those on the job, one in three was on the verge of a breakdown. It was found that women working sixty-two hours a week lost twice as much time as those working forty hours. Men who worked sixty-four hours lost twice as much time as those working fifty-four hours. Studying 50,000 accidents in four factories, they found that women working twelve hours a day had three times as many accidents as those working ten. The same holds true in this country. A 32 per cent increase in the hours worked in manufacturing explosives caused a 297 per cent increase in disabling accidents!

The United States Public Health Service, in studying labor turnover in plants working ten and eight hours a day, found that the turnovers in plants working ten hours were six times as great as in those working eight hours.

Fatigue spans the arch between health and disease. Artificially exhausted animals are more susceptible to pneumonia. Tuberculosis also is part of the fatigue problem. Many physicians view the present trend toward longer hours in industry with alarm. Charts dealing with tuberculosis in industry attracted attention during the meeting of the American Medical Association held last summer at Atlantic City. These showed the death rate to be three times as great among unskilled as among clerical workers. Beginning with Oct. 1, 1941, 1,600,000 untrained workers entered defense industries in this country. This means that many more than the usual number will be exposed to the disease. The recent employment of a large number of women between 15 and 25 years of age adds to the tuberculosis problem. These women are in the age group where the tuberculosis death rate is highest. It was pointed out that industry would help itself as well as the workers if prospective employees, especially women in the age group mentioned, were examined by x-ray or fluoroscope. This would eliminate the waste involved


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**A brand-new booklet—for girls of high school age.** Here is a completely revised version of "The Periodic Cycle," prepared with the assistance of doctors and well-known educators. The process of menstruation is explained simply, clearly. Information on health and personal care is given. The text is friendly—conversational.

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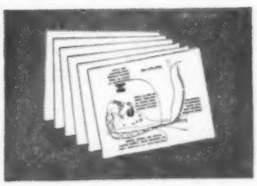

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in training women who cannot stand the strain, exclude many who would be sources of infection and help detect the disease while there is time for the worker to make successful recovery.

People rarely use all their energy. For purposes of comparison, science has computed work according to the effort it requires contrasted with that of the body at rest, commonly referred to as the basal metabolic rate. Office or factory work takes less than three times the "rest rate." Heavy muscular activity takes between three and eight times, and an average of eight times the rest rate is about all the body tolerates well over an eight hour period. The body is capable of using up to twenty or more times the basic amount of energy for short periods. Work requiring about eight times the rest rate includes that in the heavy industries, some building trades, sports, certain farm labor and the work of soldiers on forced march carrying heavy loads.

Temperature, humidity and even the movement of the air surrounding the worker are important. Excessive perspiration calls for extra salt both in food and drinking water. Clothing and food should be regulated according to activities. Loss of body heat and heart collapse are problems among those doing strenuous labor. The worker's home life and housing, his ability to get prompt and good medical attention, the general sanitary conditions in his community and even the weather or personal matters may bring emotional stress which, over a period of time, can make a worker chronically tired. Overtired bosses and executives add to the problem.

Planned rest periods help. Two officers competed in making equal lengths of trench, each with the same number of men. One had his men work as hard as possible but rest when they wished. The other split his men into three groups. Each worked five minutes and rested ten. The second officer won easily. Similar tests have been made among iron molders. Production in some cases has been increased 10 per cent a month by having workers take four ten minute rest periods a day. Workers in a shoe factory speeded output when given a morning and afternoon lunch of a glass of milk and a piece of cake. In another organization, production was increased by better lighting.

Mental and so-called fussy work tire because they demand different degrees of effort and precision, leading to interference and a complication of work rhythm. For example, it is easier to add or subtract than it is to switch quickly from one to the other. While intense mental effort can tire and cut down accomplishment, there is no proof that it will do harm unless emotional strain goes along with it.

Physicians do not know how long it takes to recover from either mental or physical work, but there is evidence that an athlete does not recuperate in an hour from ten seconds of supreme effort. Some trainers do not think he recovers completely within twenty-four hours. They do not believe that runners can do their best daily, or even weekly.

With the compulsion of an all-out effort, there is a growing tendency to relax restrictions on hours of labor in this country and at the same time speed up industrial processes. It has been pointed out that while the American workman works fewer hours than his European brother in most cases, the work in this country is more exacting, and our workmen could not work additional hours at the pace they maintain. The United States Department of Labor is now reviewing the problem. On June 24, 1942, representatives of the department met with those from the departments of War and Navy, the War Production Board, the Maritime Commission and the Public Health Service to begin drawing up recommendations for working hours in war contract plants and government establishments.

The problem of the tired business executive is also serious. He shows his weariness in his short, clipped speech, in quick, nervous footsteps, hasty meals, irritation at trifles and impatience at delays. In fact, most of us are in a rush and making efforts in activities to which we are not accustomed. More than ever before, we are hurrying. We cannot wait for another train or bus but must jam the one at hand, for which we probably ran needlessly. We do not wait to reach our destination but crowd the aisles long before the train stops. But on leaving the train, most of us can stand for indefinite periods gazing on the morbid details of an automobile accident, a fire or even a dog fight. After it is over, off we dash again as if life were a matter of seconds! Many of these careless habits of everyday life could be eliminated, with a lessening of fatigue as the result.

The problem of overworked executives takes me back several years to a November afternoon in Washington when I sat across the desk from a man who seemed to be the most weary person I had ever seen. On the street outside, boys were calling the edition of the newspapers which announced that President Roosevelt had given this man an indefinitely long recess from cabinet duties.

"You have exactly the same kind of bugs in your throat that I have in mine," he said. "The only difference is that I for a time have allowed mine to get the better of me!"

The shadows deepened along the drab walls. Official business claimed his attention, and I left to write a story about a weary man, glad to leave Washington. But the editor called me on the story. He said, "Bunk. People don't get out of the Cabinet because they are tired."

But a few months later, William H. Woodin, who had labored night and day to pilot the nation through the 1933 banking crisis, was dead.

There is an old Chinese proverb which says that when the elephant has fallen into the pit, even the frog stamps on him. Fatigue could go a long way toward digging a pit for our all-out war effort.

Since this article was written, the Office of War Information has announced the recommendation of eight government agencies that war contractors and industries adopt a 48 hour a week ceiling for men and women.—Ed.

---

**Any earache that persists for even a short time should be seen by a doctor.—** ***Red Cross First Aid Textbook, page 209.***

Well, the authors were probably getting tired. Any doctor who can see an earache for even a short time should be seen by Ringling Brothers.

## Prevention of Allergy in Children

(Continued from page 750)

ticularly of those foods, such as eggs, nuts and chocolate, which are most frequently the source of trouble.

It is not uncommon to find a newborn baby of an allergic family extremely sensitive to foods which it has never eaten. A skin test with egg, for example, may show a marked local reaction; this must be construed as indicating that the mother has sensitized her offspring by the eggs which she has eaten. That this can happen has been proven by animal experimentation.

Often an expectant mother has cravings for some particular food and may indulge in it excessively. This practice is dangerous from an allergic standpoint, since in that manner she may be making the unborn baby sensitive to the food. A well balanced diet for the pregnant woman is always important, whether she is allergic or not.

After birth, if the mother is able to nurse the baby it becomes extremely important that she eat correctly and avoid foods which were known to be a source of trouble or which she has found associated with some upset to her in the past.

If breast milk is not plentiful, the selection of an artificial food for the baby must take into consideration its allergic tendency. As a rule, foods that are heated are much less likely to cause allergic reactions than unheated ones. It follows, therefore, that a cooked milk and cooked cereals are less likely to cause eczema in the infant. Milks that have been subjected to high heat, as is the case with evaporated milk, are always preferable to fresh cow's milk.

Additional food should be carefully selected as the baby grows older. An infant with a background of allergy should not be offered egg until much later than a normal infant. Only a small portion of the yolk of the egg should be tried at first; the amount may be gradually increased if there are no symptoms.

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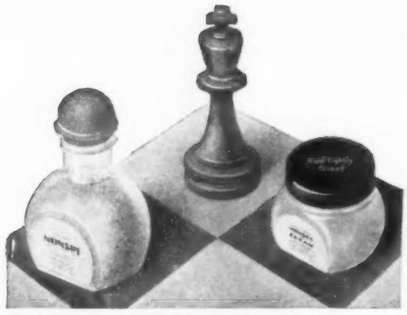

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It should be emphasized here that an infant should never be forced to eat. It has been demonstrated in many instances that food for which a child shows a strong distaste may disagree with him and cause allergic reactions. Reactions that might be expected are vomiting, diarrhea and skin rashes such as hives or eczema. Chocolate should be omitted for as long a time as possible.

In the care of an infant in a known allergic family, close attention must be given to the nursery. The room should be as near dust free as possible. Many patients have allergic reaction such as asthma or chronic bronchitis from house dust which they inhale. All wool hangings, rugs or carpets should be avoided. The floor covering should be of material which is easily washed, such as linoleum—with a cotton rug if desired. If a rug is used, it should be washed thoroughly before it is used and discarded as soon as it shows the slightest wear.

A hair mattress should not be used, since many allergic patients are extremely sensitive to the emanations from hair. These substances may travel for some distance. For example, a child who developed asthma showed a skin reaction to horsehair, yet there was none in his home. Inquiry brought out the fact that he lived across the street from a riding academy. When he moved away from this contact with horses, he lost his asthma. Even cotton or kapok may sometimes give trouble, but this is so unusual that these substances may usually be used with safety. If a hair mattress has already been purchased, it may be covered with a nonallergic material which is impervious to dust.

Infants do not use pillows, but an older child should have only cotton or kapok, and these should be renewed fairly often. Pillows made of chicken, duck or goose feathers should be avoided, and any pillow made with these feathers should be covered with a nonallergic cloth.

Furniture that is dust-collecting should be avoided throughout the home. Dry sweeping is always a source of danger. With a strong history of asthma in the family, it would be desirable—if it is economically possible—to have only filtered, dust free air in the nursery.

The baby's clothing should also receive attention. Silk or wool should not be used; both these materials have been the source of allergic rashes in susceptible infants. Cotton garments are preferable. Cotton blankets should be used instead of woolen ones. The sheets, blankets and clothing should be washed before their first use to get rid of dust and sizing.

Even the selection of pets for children must be guided by attention to possible sensitivities. Dogs, cats and birds should not be allowed in a household with a history of allergy. Many cases of asthma and chronic bronchitis show marked reactions to dog and cat hair and to the feathers of many birds. Goldfish and turtles may have to fill the place of other pets in such a household.

No woolly or feathery animals can be chosen as toys for the little ones in the allergic family. Many of these toys are made of rabbit fur, and this is a source of marked sensitiveness in some people.

The first aim is always to eliminate all possible sources of allergy. Should an infant develop eczema, however, we must attempt to exclude all suspected food from its diet and surround it only with articles which are known to produce no reaction.

As the child grows older, another method of approach to the problem is available today: skin tests. In making these tests, a small amount of the suspected material is applied to a scratch on the skin; if there is a reaction, we can often discover the tendency to allergic disorders before the child has shown any signs. For example, in hay fever or so-called rose fever, we know that various pollens from flowers and grass such as timothy, redtop or ragweed may be the source of the attack.

A child born into a family with a definite history of hay fever will often show marked reactions to various pollens long before the first sneezing begins. As soon as sneezing begins, such children should be treated with small injections of these pollens until an immunity against them is developed.

Skin tests may also be given to determine a child's reaction to all types of food, dust and various other materials that may be suspected. Such tests constitute a

valuable aid both in the treatment and prevention of allergic manifestations.

Children of allergic tendencies should not be dosed with home remedies, since many drugs may cause a disturbing and painful skin reaction in a susceptible child. This is particularly dangerous in patent medicines, because they contain numerous ingredients, any one of which may produce alarming symptoms. Even toilet articles such as soaps or powders should be carefully selected. There are now on the market hypo-allergenic cosmetic preparations for mothers and pure, hypo-allergenic powders and soaps for their infants.

Sometimes tobacco may be associated with allergic bronchitis; it is best for parents and visitors not to smoke in or near the bedrooms of infants and children.

In the first year of life, it is usual to give all infants protective immunization against whooping cough, diphtheria and smallpox. In children of known allergic families, it is wise to proceed with caution and to give smaller doses of toxoid or vaccine the first time to be sure that no marked reaction will occur. If it should be necessary to give diphtheria or tetanus antitoxin, it should be kept in mind that these contain horse serum and may cause marked reactions in susceptible children.

As the child grows older, the questions of climate and play must be considered. A dry, warm climate is preferable, if it is at all possible and practical. Games in which there is a great deal of dust, such as baseball, or sports which subject the child to undue changes in body temperature, such as skating, should be avoided.

Certainly if one must plan for the future of an allergic child and select his life's work, his sensitivity must be considered. A child who is sensitive to horsehair should not be trained for any work that would put him in contact with horses. A child sensitive to chicken or other feathers or furs could hardly become either a poultry farmer or furrier. With proper planning in infancy and childhood, the youngster born into an allergic family today may be saved much suffering, and the disabilities caused by manifestations of allergic sensitivity may be largely prevented.

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## DOCTORS WILL BE SCARCE IN WARTIME AMERICA
## SAVE THEIR TIME FOR URGENT NEEDS

HOW MANY TIMES in the years gone by have you felt just a little under par and decided that some time soon, maybe, you would see a doctor? Finally he had to come to you, didn't he?—you were flat on your back in bed. Or what about that youngster with a little pain in his tummy? Too much candy, you decided—we don't need to call the doctor. But late that night it was a different story. You called frantically, and the doctor came. Of course he came—don't doctors always come when they're called?

Indeed they do, but things may be different now that we are in total war. The army wants many thousands of doctors before the end of this year, and more after that. There are 190,000 doctors in the United States. This includes all doctors of medicine—the intern finishing his training, the old doctor retired by reason of age, doctors out of practice because of illness, some who have left medical practice for business or other occupations, the full time teachers in medical schools, doctors engaged in research work, physicians in full time public health work, school physicians, and the officers of the regular Army, Navy and United States Public Health Service, veterans' hospital and other federal services. There remain about 120,000 physicians, of whom approximately one-fourth are expected shortly to enter service with the armed forces.

Even that is not the whole story. The doctors who will be left at home will tend to be the older men, or those not physically available for military service. Long and irregular hours, interrupted rest and sleep, serious responsibilities and uncooperative patients put a severe strain on the strongest even among the younger men. Older doctors and those whose health is not robust will have a load which may prove too much for many of them in the months ahead. Already, doctors who have retired or partially retired are coming back to work. Some of these men will die sooner than would otherwise have been the case, because they have placed service to their fellows above personal considerations. There will be no military awards of valor for them, but they will be content. They will know that they have fulfilled to the utmost their professional obligation, which places the patient always first.

Many of the doctors remaining at home will be specialists, though of course the younger specialists will have gone to war side by side with the general practitioners. Specialism has taken a large place in American medicine. Progress in medical science and the swift march of new discoveries soon made plain the fact that no one man or woman could know everything about all the departments of modern medicine; specialism has become a scientific necessity. Many of these physicians limit their practice to nose and throat, x-ray, children's practice, women's diseases and other specialties. These men cannot simply quit the specialty and go into general practice. Their office arrangements and equipment—sometimes even the location—may be unsuitable. Moreover, while pursuing the intensive practice of a specialty, they have almost certainly grown somewhat rusty on the details of other phases of medicine, though of course every good doctor keeps abreast in general terms of whatever happens in medicine.

Thus it appears that many communities are going to be very short indeed of medical service, as compared with normal times. Even so, they will be better off than the rest of the world, and far from the hardships common in America fifty or one hundred years ago. Modern developments in transportation, in which doctors and ambu-

**1** **Call the doctor to your home only when necessary. Go to his office when you can.**

**2** **Help the doctor to plan his time by calling him before nine o'clock in the morning whenever possible.**

**3** **Have an examination at the first sign of sickness—it may prevent a long and serious illness.**

**4** **Go to the hospital when the doctor recommends it. He can see more patients there in the same amount of time.**

**5** **Make certain that your family is immunized against smallpox, diphtheria, whooping cough, typhoid, lockjaw.**

**6** **Observe good health habits: avoid overeating, overdrinking, overworking and overexercising.**

**7** **Take courses in first aid, home nursing and nurse's aide training to help relieve the burden on trained personnei.**

**8** **All doctors are doing extra work today; don't add unnecessarily to their responsibilities!**

lances have and will continue to have priority, plus hospitals which dot the country, enable the doctor of today to accomplish much more than did the doctor of the horse-and-buggy and saddle-bag days. Health conditions today are greatly improved. There will be shortages of nurses—there already are—and the same is true of hospital personnel, skilled and unskilled, including x-ray and laboratory technicians, occupational and physical therapy attendants, cooks and kitchen help. As the drain on man and woman power grows heavier, these situations will become more difficult.

Doctors, nurses and their associated workers in medical and health fields will do their best to serve the people under these trying circumstances, but the people must help. There is much that you, the patient, can do to increase your doctor's and your hospital's efficiency and to preserve the available medical services for those who need them most.

First, you can go to your doctor instead of calling him to you whenever that is practical. Obviously the patient bedfast with fever, weakness or other condition in which being moved would do harm must be attended by the doctor at his bedside. But if the patient is up and moving about, able to go to the drugstore for the newspaper or to attend the neighborhood movie, he is equally able to go to the doctor's office. The doctor can see many more patients in his office than he can in their homes in the same amount of time. The luxury of unnecessary home calls must be given up.

When you need the doctor in your home, try to let him know about it early in the day. Then he can plan his calls to make as many as possible with the least duplication of travel. If he has to call on you and somebody else in the same neighborhood, he can make one trip do the work of two. While you are calling the doctor, tell him as best you can in a general way what kind of illness he may expect to find. This may enable him to bring some equipment or supplies which ordinarily he does not carry. The modern doctor's bag is comprehensive in its furnishings, but he can't carry his whole office around.

You can and should reduce the likelihood of disease or upset by observing the principles of sensible living—these include an adequate diet and no overeating, sensible use of liquor and tobacco (if you use them), plenty of sleep and rest, avoidance of accidents due to carelessness, and in general the observance of those sensible procedures to which we have long given careless assent in theory and almost total neglect in practice.

You can render a number of diseases far less prevalent and thus reduce the need for medical and possibly hospital facilities for their care. Successful vaccinations or other immunization procedures are now available for smallpox, diphtheria, whooping cough, typhoid fever and lockjaw. These immunizations should be procured; needless epidemics are unpatriotic! The prevalence of venereal disease can only be partially under the control of medical, public health or military or police authorities. It is largely within the control of individuals.

Before your doctor is called into the service, ask him to recommend two or three other doctors nearby. Then get acquainted with them, and choose one to be your doctor during the absence of your own regular family physician. If your doctor has already gone, try to remember who took care of his work when he was away on vacations or attending medical meetings. The man in whom your own doctor has confidence is likely to be a good choice.

The medical and allied professions will do their full part in protecting the health of you and your family and caring for you in illness. They ask and need your cooperation, not for their own convenience, but so that they may deliver as much service as possible with the greatest saving in tires, automobiles and repair parts, medical equipment, supplies and precious time. Don't waste your doctor's time, or you may cause loss of life or severe suffering to some one else in your community.

At the same time, don't take foolish chances. If you are in doubt as to whether or not a patient needs a doctor, don't be overconscientious. At least talk to the doctor by telephone. In case of doubt, the first responsibility is to the patient. Remember, early treatment may shorten the illness—a stitch in time may save stitches in the operating room!—*Bureau of Health Education, American Medical Association.*


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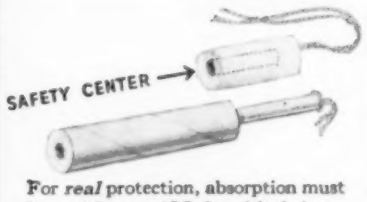


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The Modess Tampon

# MOSQUITO FIGHTER

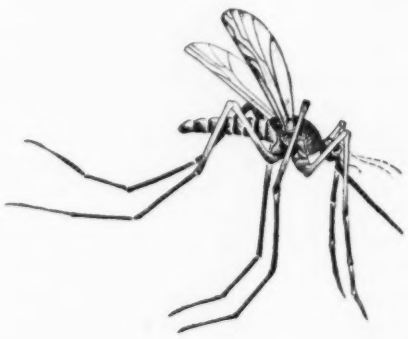
(Continued from page 748)

of the water-holding bromeliads, which grew on their trunks and branches. There are several species of the *Bromeliaceae* in Trinidad, and some of them are capable of holding large quantities of water. It was found by Dr. Rozeboom that the plant called *Gravisia* was favored as a breeding place by *A. bellator*. *Gravisia* is large, with broad, spined leaves radiating outward from the base, and these leaves may catch and hold as much as a gallon of water. Sometimes a single plant may contain two dozen or more *A. bellator* larvae, as well as large numbers of species of mosquitoes, all adapted for living only in these unusual breeding places.

Before Dr. Rozeboom's visit to Trinidad, it had been observed by Dr. de Verteuril that with the growth of the cocoa districts, malaria increased in alarming figures. He reported that in the Four Roads-Tamana area the spleen rate of school children between 4 and 8 years of age was 66 per cent, and at Coryal Tamana the rate was 70 per cent. Since noticeable enlargement of the spleen occurs in the presence of malaria, the percentage of persons in whom such enlargement may be observed—called the spleen rate—has been found to be a reliable indication of the prevalence of malaria.

During the dry season, rivers and streams in those areas dried to form nothing more than a series of isolated pools. These were formerly thought to be breeding places of the *Anopheles* causing the malaria epidemics. De Verteuril's investigations, however, proved these pools to be no more than the habitat of the species *Anopheles oswaldoi*, a noncarrier of malaria. Yet, malaria continued to increase and wipe out entire communities. It was noticed that large numbers of *A. bellator* swarmed in the cocoa districts. They fed on both man and animals. They seemed to attack in houses as well as in the cocoa forests, and de Verteuril's epidemiologic studies pointed to this mosquito as the possible agent in the transmission of malaria.

To conduct his studies, which were designed to confirm de Verteuril's observations, Dr. Rozeboom selected the cocoa districts of Tamana Reserve, reported as intensely malarious. These areas were between Cumuto Village and the intersection of the Little Cora Road to Sangre Grande, along the Cumuto Main Road, and a small community near the Canadian Mission Indian School on the St. Marie Emmanuel Road. Information relative to the breeding and biting habits of the suspected species was obtained by collecting larvae from several species of *Bromeliaceae*, bamboo joints and cocoanut husks, and by capturing adult mosquitoes from human and animal bait. *A.*



*bellator* preferred the blood of man to the cow and donkey bait used by Dr. Rozeboom in making his collections.

Another species of *Anopheles* is involved in the transmission of malaria in Trinidad (*Anopheles aquasalis* Curry). This species breeds along the coast in swamps, and in the early part of the rainy season, from June to January, it moves inland for a distance of three miles to breed in collections of fresh water. Dr. de Verteuril estimated that this species causes about two thirds of the malaria in Trinidad, but it is limited to coastal areas; it is not found in the interior cocoa-growing districts.

In Trinidad, the malaria mosquito, *A. bellator*, attacks man viciously, literally in swarms, during the hours when the female becomes active. In the jungles, the female will attack in early afternoon, but the real flight begins around 5:30 in the afternoon and continues until 7:30. Receiving information that natives in the cocoa district at Todds Road complained of being attacked by mosquitoes during the early morning hours, Dr. Rozeboom and Mr. Laird investigated, even entering the houses of natives while they slept. They found that there is a morning flight of *A. bellator*, although it is lighter than the evening flight. *A. bellator* usually appears in the morning between the hours of 4:30 and 6:30. The mosquitoes even enter the bed nets in their frenzy to feed. While the species does attack indoors, the females do not remain indoors after feeding. They return immediately to their jungle resting places. They attack more readily out of doors or under cocoa drying sheds, and also in the cocoa forests.

In order to make their captures, Rozeboom and Laird paid natives to stand quietly while the mosquitoes settled on their arms and legs. By placing glass tubes over the insects and sucking them into the tubes, they trapped the mosquitoes and transferred them to small cages. The collection acquired in this manner numbered over 5,000—725 of which were later dissected. Of these, three were found to carry the malaria parasite in their stomach or salivary glands.

The malaria-carrying mosquito in the United States rarely bites in the daylight and seldom bites any one who is moving about. Then, too, *Anopheles* is easily driven off, and after feeding will rest indoors. *Anopheles* rest in a straight line, frequently appearing to stand on their heads. The harmless mosquito usually rests in a "humped up" position.

When a healthy person is bitten by a malaria-carrying mosquito, the malaria parasites enter the red blood cells. They feed on the cells and grow until they divide into a number of pieces meeting in the center like slices of a pie. Each parasite is capable of increasing and dividing itself from eight to thirty-two times. When maximum parasite growth is attained, the blood cells break, setting free the young parasites to enter another blood cell, where they multiply and divide themselves again and again. When the red blood cells break they liberate along with the parasites small amounts of poison. Large numbers breaking simultaneously cause the chills and fever associated with malaria. It has been estimated that at least 150,000,000 parasites must divide at the same time to liberate enough poison to produce a chill.

Knowledge of the origin of the malarial parasite is about as easy to decide as the question of the hen or the egg. Mosquitoes acquire the parasite only through infection caused by biting a person who has the parasites in his blood. The male and female parasites join in the stomach of the mosquito and pass into her stomach wall. After about twelve days, these bodies break and free young parasites, some of which find their way into the salivary glands of the mosquito. There they mix with the saliva and are injected into the blood stream of the person bitten to start their life over again. The malaria mosquito cannot infect until the young parasites reach her saliva. Malaria develops anywhere from six to fifteen days after biting. The malarial mosquito is slight and graceful. Its wings are generally spotted or dusky. Wing markings and colorings of *Anopheles bellator* are entirely different from those of other species of malaria-carrying *Anopheles*.

While *A. bellator* may be considered a forest anopheline, its actual resting places are unknown. Although Dr. Rozeboom reported capturing a number of adults in the underbrush of cocoa forests with a net, he said he could not be sure whether they were flying through it preparatory to feeding on him, or were actually resting there.

Knowledge of the breeding and biting habits of malarious mosquitoes is essential before proper control measures can be taken. In the United States, along the coastal plain from Connecticut to Texas, over the lower Mississippi Valley and in a number of valleys in the Pacific Coast country, control has been simplified by filling or draining likely breeding places and by destruction of the larvae. Ponds are oiled and Paris green dusting operations have been accomplished by airplanes. Mosquitoes lay their eggs on the surface of the water. The eggs float and in a few days hatch into larvae, or "wiggle tails." These larvae live in the water and, in time, turn into pupae, or "tumblers," which eventually turn into mosquitoes. The four changes require from twelve to sixteen days in summer and longer in cool weather. The larvae of *Anopheles* lie on top of the water; larvae of other mosquitoes hang from the top, head down. If these larvae are touched, they always dive. The *Anopheles* larva may dive, but generally it scoots away along the top of the water. It is more important to recognize the larvae of *Anopheles* than it is to recognize the mosquitoes themselves.

Contrary to popular belief, *Anopheles* prefer to breed in clean water, in pools and ponds with grassy edges. Pools formed by obstructions in small streams are also favored. Occasionally, they breed in almost any collection of water, such as shallow wells or water barrels, especially when leaves, grass or green algae—"frog moss"—are present. As a rule, however, they avoid barrels, cans and other artificial containers.

Control in Trinidad will require far different measures than in any other malarious section. Larvae of *A. bellator* lie deep in the spiny hearts of the bromeliads. There are literally thousands of these plants growing high on the jungle immortelles. Dr. Rozeboom pointed out that dusting or spraying a jungle or attempting to reach the water that collects in the bases of terrestrial or arboreal *Bromeliceae* is impossible. The most effective method of reaching and destroying the larvae must lie in getting rid of the bromeliads, which would involve cutting down the tall immortelles to insure protection of the health of natives and American troops stationed in Trinidad.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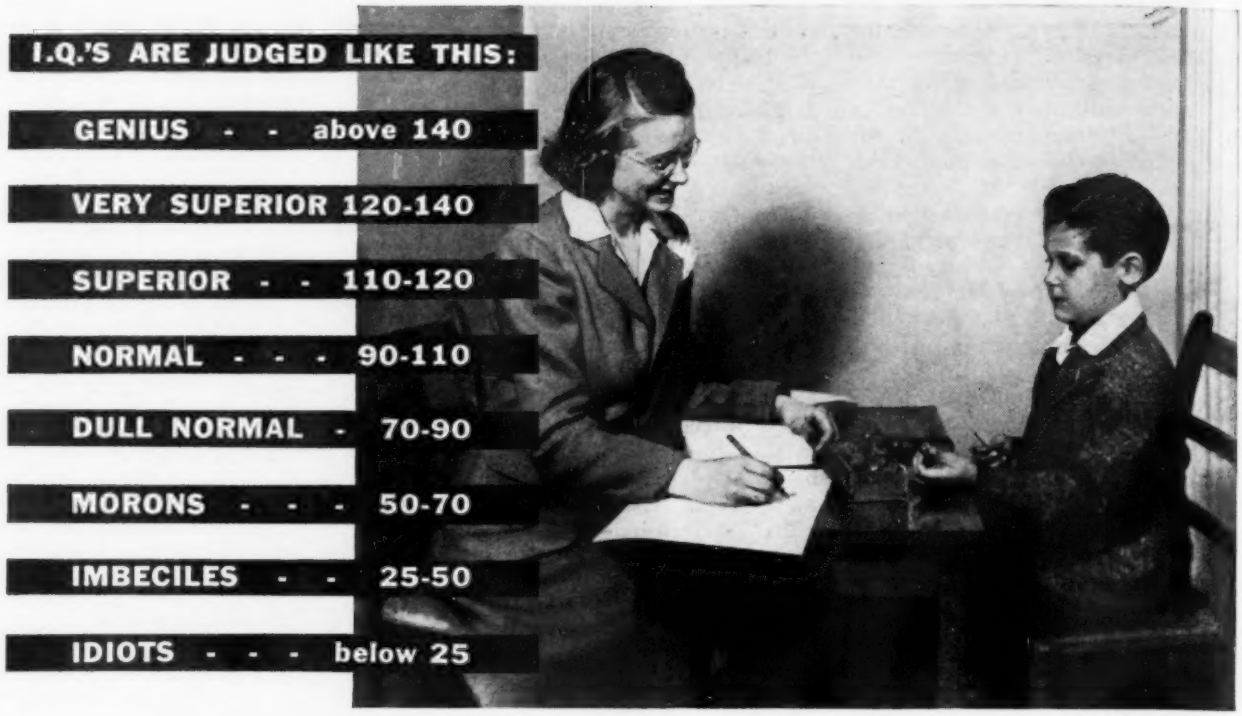
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IMBECILES - - 25-50
IDIOTS - - - below 25

# YOUR CHILD'S INTELLIGENCE

**By RUTH E. BECKEY**

AS SOON AS your child enters this world, he begins his education. He learns to nurse. He learns to cry when he needs or wants attention. In a short time, he learns that a nipple means milk. As he matures physically and emotionally, he finds that his new environment is making certain demands of him which he does not like. Consequently, he is required to make some adjustment to the unpleasant or difficult situation. How he will adjust and how this adjustment affects his personality will depend in a large measure on the level of his intelligence.

What is his intelligence? How do you know how to help him unless you know how well he is able to learn his new tasks? Ordinarily, the child learns in a very normal way without much help from any one. Approximately 60 out of every 100 children are normal in intelligence. Consequently, they fit into the usual demands of society without too much trouble. However, the child who is above or below normal in intelligence has many more problems of adjustment to make to a society whose demands are made for normal people. It has been estimated that about 20 children in every 100 are superior in intelligence and need special guidance if they are to achieve the maximum of their abilities. On the other hand, about 20 in every 100 are inferior in intelligence and therefore need special training to make them fit into life's plan without serious maladjustment of personality. The goal for you as a parent is to make your child a happy, well adjusted personality. If he is exceptionally bright, provide opportunities for him to use that intelligence; otherwise he will misdirect his energies. If he is retarded mentally, help him to learn activities suited to his level of performance.

Almost fifty years ago, the first testing of intelligence was tried by a Frenchman named Binet, who became the co-author of the present individual intelligence test—the Binet-Simon test. The French people recognized a need for some method of finding out which children were incapable of learning in school.

In the Binet-Simon test, many problems and tasks are given to the individual to solve. His ability to perform the series of tasks imposed in the test is measured in his score. This final score is called the "I.Q.," or intelligence quotient, which is an index to the child's intelligence or ability to learn.

Many attempts have been made to define intelligence. What is it? Simply stated, it is that innate ability of the child to learn and adjust himself to the problems of his environment. He must be able to think, solve difficult problems, reason out situations and evaluate methods of achieving goals.

What are the types or "degrees" of intelligence? One child differs from another in the amount of

intelligence which he has. The Binet-Simon test is arranged in such a fashion that it is possible to achieve an I.Q. of 150 or 170, although these are rare scores. Terman, who has made extended study in the field of intelligence testing, made the following grouping of intelligence scores: genius or near genius, above 140; very superior, 120-140; superior, 110-120; normal, 90-110; dull normal, 70-90; morons, 50-70; imbeciles, 25-50; and idiots, below 25.

Although other factors such as emotional behavior and school achievement are taken into consideration, the intelligence quotient or score is a fairly good indicator of how well your child will be able to adapt himself to the needs of his surroundings. If his intelligence falls in the lower brackets, then he should have tasks suitable for his ability. The same is true of the superior child.

If you think that your child is unusually bright, or possibly you are wondering if he has adequate intelligence, you should make some attempt to find out if he is doing suitable work for his mentality. Each child must be treated as an individual. Not until the child is doing the work that is entirely within his range of power will he be a happy personality. If he is in school, go to the child's teacher or principal. Talk to her. Tell her your problem. In some cases, school authorities are hesitant about telling a child's intelligence rating, but usually they are hesitant only because of possible misunderstanding arising on the part of the parent. If you cannot obtain the exact score, at least you can ascertain if the child is doing school work adequately suited to his mentality. Large school systems usually have better facilities for caring for the exceptional children than do small schools. If the child is below school age and you feel that you should have his intelligence tested, go to a reliable psychologist.

Before the child is 6 years of age, several factors may be responsible for causing his delay in developing normal intelligence. For instance, delayed speech, emotional blockings or inadequate glandular functioning may retard the child's mental development. After the child learns speech and attains a vocabulary with which to think, his intelligence quotient will often increase as much as twenty or thirty points. Proper emotional retraining by a trained person will also aid in releasing emotions which have tended to retard his intellectual growth. If glandular deficiency is suspected, let your family physician give the child a basal metabolism test which will show if too much or too little thyroid is the disturbing factor.

In addition to these causes of mental retardation, heredity has been stated by most authorities to be the main factor in causing mental deficiency. In some instances, birth injury, paralysis and disease have been known to cause backwardness. If your child happens to have an inferior mental capacity as a result of any of these latter factors, nothing much can be done to help him gain more intelligence. The best procedure for you to follow is to accept the fact as well as you can and then find a way to help your child to be trained sufficiently to care for himself and eventually, if possible, to earn his living. What he can do depends on the degree of his intelligence. In all events, begin specialized training early for your child if he is found definitely to be retarded.

The mentally deficient child should learn how to get along with other children; he should learn to keep himself neat and clean; he should learn certain habits of conduct acceptable to society; he should become as independent as he is able; and he should have some preparation for a place in the world's work. In many school systems, special education rooms are provided for children who are retarded. If you are hesitant about the advisability of allowing your child to be placed in such a room, visit the teacher and see her work with the children. You may decide that this is just the place for your little boy or girl. If he is abnormal, he will no doubt feel his inferiority sooner if placed with normal children.

How does the child with low mentality differ from another child who has a high rating? In the first place, children with inferior intelligence are frequently slower in physical development than are the normal or superior children. They are slower to begin walking. They are usually slow to begin talking. In the second place, low mentality causes the child to be poor in mak-


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ing adequate adjustments in social situations. He will often cling to old ways. He has little imagination in how to get out of trouble. He wants to play by himself. In the third place, the boy or girl with inferior ability is slow to improve with instruction. He may learn, but his learning progresses at a slow rate compared to that of his brighter friends.

What are the chief characteristics of the child with superior mentality? Terman, in his studies of intelligence among children, found the following tendencies for the superior children: curiosity, alert understanding, extensive information, good memory, early speech development and comprehensive vocabulary. Other studies have indicated that superior children usually have better health and better body builds than those of the inferior group. A bright child may show powers of leadership, but he is not always the leader of the group. He may be shy and still brilliant.

A leader needs to have initiative, willingness to work and ability to work with people plus his natural intellectual power. A bright child usually has a keen emotional drive to do things. He wants to go to school. If he makes up his mind that he wants an education, nothing will stop him.

Perhaps your problem is that you have a child with superior intellect. What are you to do with him? How are you to treat him? Perhaps he is only 6 years old, and yet he thinks and acts like a 10 year old. Usually, the intellectual growth in such cases is faster than the emotional and the physical growth. Consequently, the problem becomes complicated.

These suggestions may help you in your treatment of the child with superior mentality:

1. Since his emotional and physical development are not usually on a par with his intellectual ability, he should be allowed to play with children of his own age so he can learn to make the social adjustments he will need later if he is to use his intellectual capacities to the best advantage. His physical work, of course, must be at his own age level, since his strength has not developed as rapidly as his mentality.

2. Provide educational toys for him suitable for his mental age level. If he is mentally 10 years old but actually only 6, then his toys should require the thought of the 10 year old.

3. Talk to your boy as though he were a 10 year old, since he thinks as a boy of that age. He can discuss the same problems that the 10 year old discusses.

4. Instead of rushing him through school before he is emotionally ready for adult life, provide opportunities for him to use his superior ability in other ways. For instance, he can be given extra work at school if no special facilities are provided in your school for the exceptional children. In order to make a superior grade he must do a certain amount of work. In many schools, no attempt is made to take care of the special abilities of the superior child. Consequently, he often uses his energies in unprofitable ways. The superior child must have suitable activity and enough of it!

5. You may have to help the child to maintain a proper attitude toward his superiority. He may soon discover that he is able to do things that his classmates cannot do, especially if he is kept in a room with all types or degrees of intelligence. He may brag: "Johnny sure is dumb! I got through an hour before he did and didn't have a thing to do, so I just threw paper wads at that Wallace girl!"

Of course, the child need never know his score in intelligence until he is old enough to understand its significance. Moreover, he should never hear his superiority discussed at any time. If you should even discuss his unusual ability in front of relatives, the child may soon learn of it through the avenues of gossip. You can help him to maintain a normal attitude toward his superior mentality by calling attention to activities of other children who are able to do some things as well as he does and also by calling attention to some things which he is unable to do. In this way, you may keep your child from developing that unfavorable superiority complex which may lead your friends to dislike him as a person.

In his adjustment to intellectual problems, the child's personality emerges according to his ability to meet each situation. The normal child reacts as almost all children tend to react. That is the meaning

of normalcy—reaction in an average or normal manner. However, each child with a normal intelligence rating is different from others. One child may be better in literature than another. A second child may be good in mathematics. So even with the child of normal intelligence, individual differences occur according to particular abilities. The big problem for you, as the parent, is to help the child make the most of his capacity.

Since there are so many more children with normal or nearly normal intelligence, the major interest is with the normal child who has adequate intelligence for most needs. In order to help the young child to develop his intellectual capacities as adequately as he is able with "what God gave him," you may be able to use some of the following suggestions:

1. Help the child to maintain good health. A healthy body will make responses more readily than will the sick, weak body. It will be alert to the problems it faces.

2. Encourage early speech development by stimulating his interest in a variety of objects, pictures and animals. He will usually wish to make some kind of response. New environments encourage responses which often lead to learning the new words. Words are the tools of thought which the child needs before he can do much thinking.

3. He should be encouraged to do the best that he can, although you should never expect him to do more than he is mentally capable of doing. Many behavior problems result from overstimulation by parents. Dad may say, "You've got to make all 'A's' next time, or I'll not give you that pony you want."

4. Help the child to develop responsibilities about the home. In this way, he will have to solve problems and concentrate on a definite task until it is finished.

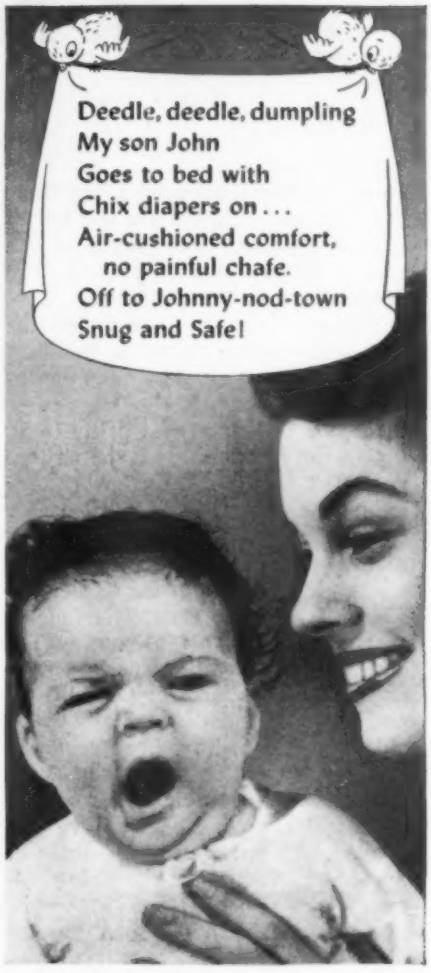
5. Hobbies are useful activities for children with all degrees of intelligence. They should be chosen and directed according to the needs and abilities of the particular child. The mentally deficient child may need more guidance than the normal or bright child.

## Who's Who in Hygeia

(Continued from page 724)

the University of Texas and has been supervisor of science for the public schools of Austin, Texas, and head of the science department of the University of Texas demonstration school. "Our democracy will not work if the citizens are not educated," Mr. Hudspeth says, "not only in the three R's but in history, geography, social institutions and science. Of these subjects science seems to be the most important now, but the schools are doing the poorest with it. Without adequate education in science and the other subjects I believe that the judgment of the citizen on personal and public matters will often be faulty, for his judgment will not be based on facts." To study Mr. Hudspeth's formula for the improvement of science teaching, turn to page 796.

J. ARTHUR MYERS, M.D., co-author with Virginia L. Dustin of the series of articles on tuberculosis appearing in HYGEIA, is professor of preventive medicine and public health at the University of Minnesota medical school and a member of the executive committee of the Minnesota Public Health Association. For the past eight years, Dr. Myers has also been chairman of the tuberculosis committee of the American School Health Association, and he served a term a few years ago as president of the National Tuberculosis Association. Along with his clinical, educational and executive responsibilities, he has helped in the fight against tuberculosis and toward the improvement of public health methods by contributing more than four hundred articles on public health to medical, nursing and educational journals. "Tuberculosis in Our Schools," on page 752, is the story of an effective campaign in the battle against disease which Dr. Myers is still helping to carry on.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# A Better Way of Living

(*Continued from page 737*)

company and their agents, but their use and coordination are the job of the Committee. The name of the company does not appear in the program or on the materials. Thus employee interest is enlisted as it could not be in even the best of superimposed programs without participation. It becomes their own job, and they take pride in it.

Carefully worked out helps are provided in the form of procedure manuals, a periodic bulletin for committee members and a month to month plan of action, but these allow plenty of room for flexibility. The Safety Zone Committee meets at regular intervals to survey the accident and health situation, seek causes for unsatisfactory conditions and suggest remedies. Many valuable suggestions have been received and carried out as a result of these committees and their work. Accident and sickness losses have improved. The program is popular in numerous industries covering almost every conceivable type of business establishment. A special modification of the program extends it to fleets of trucks operated far from their base establishment, with marked improvement in accident records.

The educational program which functions through the Safety Zone Committees is planned well in advance. The topics for the twelve month period starting last July are as follows:

July—Profitable use of leisure time (Pay for Time Off)
August—Danger and cost of uncontrolled temper
September—Dental hygiene
October—Tuberculosis
November—Periodic health check-up
December—Nutrition; selection of food
January—The source and prevention of infections
February—Pneumonia
March—Healthy hearts
April—Cancer
May—Sleep
June—Sanitation from a practical viewpoint

On each subject a correlated set of materials is prepared and distributed sufficiently in advance to allow for effective use. The sound film strip is the central item. The practical approach which characterizes these strips can be gathered from the summary which heads this article. Pictures out of this film strip are shown on page 734. To accompany each film strip are posters bearing the calendar for the current month and a selected picture out of the film strip, with a message summarizing the health theme of the month. Pocket size folders briefing the film strip message, with selected illustrations, are provided. Members are encouraged to take them home. Special posters, developed out of local suggestions, are often used to emphasize special phases of the month's program which have exceptional local interest, or to point out unusual accident liabilities or extraordinary health hazards, such as epidemics or undue seasonal prevalence of disease. Some local ideas of exceptional originality have been produced. The Safety Zone Committee encourages suggestions through a poster (illustrated), which depicts the badge identifying the committee members and solicits ideas.

The execution of the program is simple. A monthly meeting of employees is arranged, usually on company time. The sixteen minute sound film strip is shown, and folders are distributed. When no suitable meeting place exists, the message is broadcast from a record over a public address system, employees remaining at their place of work; this is done in five minute instalments on three successive days. Folders are issued with the film strip. In the meantime, the calendar posters have been displayed to serve as frequent reminders. Thus the theme of the month is established. Additional movie or talkie films, locally procured, may be shown. Discussion is encouraged. Local interest and the Committee do the rest. Every one is encouraged to contribute cooperation and ideas. "A better way of living," which is the stated objective of the program, becomes the fashion. When the film on colds was shown in February 1942, depicting the results of unmuzzled sneezes, workers began giving sour looks to the promiscuous sneezer. After the lesson on fatigue (May 1942), the half-asleep worker who made mistakes and caused accidents ceased to be a hero by reason of his epic celebration and magnificent hangover. On the contrary, he found himself in the classification of a dumb "heel." He didn't stay there long.

In the beginning, of course, all this was theory. Now it has been proved in hundreds of factories. A more healthful way of living has actually been sold to thousands of men and women whose earning power depends largely on their health. They have been allowed to come to their own conclusions on the basis of facts presented to them honestly and sincerely. There are no "do's and don'ts"—just straight, hard facts. What you do with them is up to you. You do it, or you don't, not for the "company," not even for the nation or for victory. You do it because it impresses you that it is the smart way to play the game. Or if you don't do it, you pay instead of collecting. It's up to you.

Health educators have been talking about these principles for years and have tried earnestly to apply them. Here is an encouraging instance in which they have been carried out successfully.

# Make Your Home Safe

(Continued from page 747)

space at the bottom than one day arrive there in an unscheduled forced landing. And wide, shallow treads are also easier on the muscles and the heart.

Perhaps the most dangerous member of the household is the person who can always be depended on to leave things lying about and doors ajar. If he drops a shoe or a sweater on the stairs as he goes up to bed, he forgets all about it, until some one else trips over it in the dark and falls down the rest of the flight. A possible Household Safety Enemy No. 2 is the restless furniture changer, who cannot bear to leave a chair or a lamp or a table in the same location for longer than a week. Result, for a minimum, black eyes and shin bruises, and for a maximum, serious injuries. Those stodgy persons who prefer things in their accustomed places—furniture, shoes and garments—are helpless.

Now come out into the kitchen. You open a cupboard door and simultaneously recall an article you need in the lowest drawer beneath the cupboard. You secure the item and straighten up—almost! A cracked cranium reminds you that the cupboard door is still open. Did you leave that drawer open far enough to use it as a step ladder in reaching for a dish on the top shelf? Better close the drawer before you step up, turn your ankle and fall. Avoid, too, the use of chairs and tables as substitutes for step ladders. They are constructed to serve definite, familiar purposes, but they are not designed to elevate human beings above the floor level.

Stop! Did you spill a blob of cake batter on that spotless linoleum? Wipe it up now, for safety's sake, if not merely because you are a fastidious housekeeper. A very small drop of moisture on your kitchen floor may be just the thing for that sideslip fall.

But not only the "spotty" floor can hold its danger possibilities; the floor finish and its covering need careful checking, as well. Is your beautiful, shimmering linoleum or your handsome livingroom floor super-waxed to insure an eventual casualty? You may cheat danger for a while as you tread those lovely, shining floors, but you will go down fast one day.

Remember, too, that even a "safe" floor finish and rugs kept fastened in place and in good repair do not spell safety if you amble about in soft bedroom slippers or broken-down old shoes. Such footwear cannot save you from sudden wrenches and twists of the ankle. "Wearing out" old shoes at home is poor economy; unwise thrift measures may result in a costly mishap. Look to your shoes. If you must "run" up and down stairs, never run in loose slippers. Take time to put on shoes that will support your feet properly.

Don'ts for firemakers might fill page after page. And still intelligent persons use gas heaters and stoves which they know are leaky; or they turn the gas on full force and throw the lighted match toward the burner; or they work near open flames while wearing fuzzy, flimsy clothing; or they try to burn the trash on a windy day without benefit of container; or they defy with airy insousiance the directions for firing the furnace, until the day it blasts them to heaven or the hospital.

These optimists have kindred spirits who nonchalantly pull the electric cord from the socket with the current still turned on, or blithely continue to manipulate appliances with defective wiring. They invite infections by removing slivers with unsterilized needles and treating their corns and calluses with knives or scissors. Only afterward do they wonder why.

Fraught with danger may be even that modern indispensable, the shining bathtub. Over its treacherous surface too many a foot has shot in unplanned flight. Eliminate the thrills before they eliminate you. A rubber mat placed in the bottom of the tub will give you a firm stance; and a handle at the side to grasp when you rise may make the difference between the quick and the dead.

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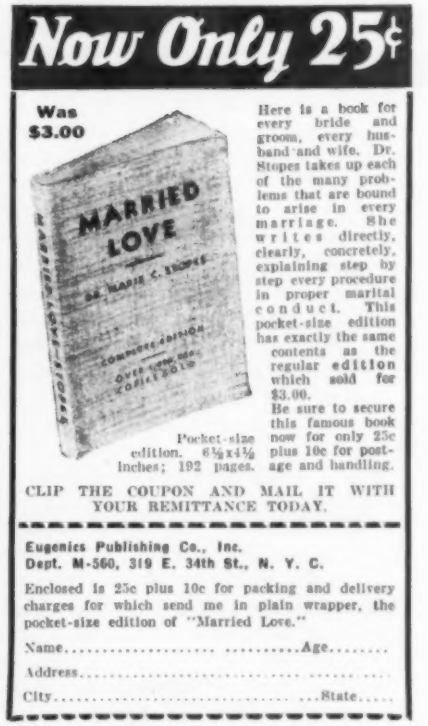
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# Books ON HEALTH

### Reference Handbook for Nurses

By Amanda K. Beck, R. N., and Lyla M. Olson, R.N. Cloth. Price, $1.60. Pp. 347. Philadelphia: W. B. Saunders Company, 1941.

The fact that this is the ninth edition of this volume shows both that it is popular and that the authors are eager to keep it up to date. It has been completely revised and adapted "to the practical needs of the student and private duty nurse, as well as to all graduate nurses in various specialized fields."

The opening paragraph of Part I tells how to choose a nursing school.

The second part is devoted to the care of emergency cases; the giving of first aid. The contents of a "Representative First-Aid Kit" are listed; a reader may wonder whether the list is not more nearly ideal than representative.

The Materia Medica section contains a list of official synonyms for popular medicines, also some tables simplifying the preparation of solutions.

The largest portion of the book is, as it should be, devoted to the actual bedside care of the sick. In Part IV, nursing procedures are so carefully described, step by step, that during these times, when graduates of former days are being pressed into service, this book will seem to some like an answer to prayer.

The importance of records—sometimes not appreciated by a nurse—is brought out in a challenging paragraph: "Clinical charts . . . are the foundation of good nursing. They tie together the orders of the doctor with the work of the nurse."

Part VIII, which deals with pediatrics, has been prepared by a pediatrician and the Director of Nursing in a children's hospital. In the ninth part, "The Operating Room," four pages of drawings show exactly what sections of the patient's body should be prepared for certain operations. This is unusually helpful to a nurse and adds greatly to the value of this splendid chapter.

The book closes with a thoughtful Part X in which the writers evidently have tried to think of anything omitted that should have been put in. A comprehensive index closes this altogether excellent work, which shows very clearly why it has been popular for more than thirty-five years. This edition is the best one yet!

BEULAH FRANCE, R.N.

### Workbook Manual for Marriage and the Family

By John Harvey Furbay. Paper. Price, $1.50. Pp. 247. New York: D. Appleton-Century Company, 1942.

This workbook is a large volume which consists of eighteen chapters or sections and an appendix. Each chapter is made up of a short discussion on such subjects as: The Selection of a Mate Who Is Fit to Marry, Marriage and the Honeymoon, The Biology of Reproduction and other usual topics found in a college text on marriage and the family. In addition to a short discussion which follows each chapter and is usually about two pages in length, there is a blank interleaf for recording lecture notes and a one or two page bibliography dealing with both the technical and popular literature of the subject. This volume is useful when used in conjunction with one or more of the standard college texts on marriage and could be used by a professor who had some basic knowledge of his own of the scientific background of the sociology of marriage. It is of no value to the person who wants to instruct himself in the subject.

LOWELL S. SELLING, M.D.

### Everyday Nursing for the Everyday Home

By Elinor E. Norlin, R.N., and Bessie Donaldson, R.N. Cloth. Pp. 306. Price, $2.50. New York City: The Macmillan Company, 1942.

This is a readable and thoroughly dependable book dealing with the problem of nursing to keep well and nursing when illness comes. In the first part, the authors discuss the general subject of nursing and what the term implies. They give excellent information on fundamental principles of nursing and outline the responsibilities of the home nurse. Information on keeping the child well and happy from birth through the teen age is adequately and admirably discussed.

In the second part, there is a good discussion on scientific attitudes concerning pseudobeliefs and practices. The problems of caring for the sick in the home and making the room into the sickroom are excellently described. Detailed information on everyday care of the patient and the simple measures which are commonly prescribed by the physician are described and illustrated.

The descriptions given are simple and stated in intelligent, easily understood terms. No question that might arise in the mind of the reader or that might confront the "home nurse" is ignored. The use of simple line drawings to illustrate the various points is of tremendous value. The authors also give an excellent table illustrating the average development of the baby. A table such as this is often sought for and is always interesting. An especially good chapter is the one which gives sound and valuable information on the prevention of speech difficulties. This is a book that should be on the library table of every home.

P. A. TESCHNER, M.D.

### Heredity, Food and Enviroment in the Nutrition of Infants and Children

By George Dow Scott, M.D. Cloth. Price, $5.00. Pp. 778. Boston: Chapman and Grimes, Inc. 1942.

Most books dealing with nutrition are devoted almost entirely to a study of foods, their constituents and their effects on the body. This

book attempts to deal with the matter of nutrition along much broader lines including, in addition to the discussion of foods, heredity and environment as they affect the child's development.

The early chapters of the book deal with heredity and environment, disease, and the mechanism of resistance to disease. There is a discussion of medicine, including some material on its historical development. There follow chapters on metabolism, infant nutrition, and finally a discussion of various foods and physical and psychic stimuli.

It would not appear that a book of this type would be of great usefulness to the average parent, although the material presented is excellent and would be found helpful to the nutritionist, teacher, and student.

The author, at times, makes statements which hardly are borne out by scientific evidence. Thus, he states, concerning appendicitis: "The fundamental causative factor in this condition, it would seem, is a badly chosen and improperly balanced food regimen."

The discussion of the vitamin B complex would appear inadequate. A bibliography appended to each chapter adds to the usefulness of the material, while the failure to include an index detracts.

WILLIAM I. FISHBEIN, M.D.

## NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through HYGEIA or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

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Chapman and Grimes, Inc.,
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The Macmillan Company,
60 Fifth Avenue, New York City.
W. B. Saunders Company,
W. Washington Sq., Philadelphia, Pa.

# Tuberculosis in Our Schools

**(Continued from page 752)**

who become infected through association with contagious cases in the general community—entirely apart from their professional activities.

How can our teachers be protected against tuberculosis? For those who have been infected in the home as children, nothing can be done except to examine them annually in order to detect any disease which they may develop before it becomes contagious and when it can be treated successfully with little or no loss of time or inconvenience. We now know how to create a safe environment in the homes of all infants and children; when this has been done for a few years, there will be no teachers entering the profession who have been infected in their own homes. Educational institutions also can have an environment free from contagious tuberculosis. When this has been accomplished, no teacher will enter the profession who contracted tuberculosis in college.

Every teacher should demand that no person with contagious tuberculosis be permitted to live in homes or elsewhere where teachers board or room; every teacher should demand that no contagious case of tuberculosis be permitted to remain among his fellow teachers or other members of the personnel in the school system, or among the students. When these measures are enforced, no teacher will contract tuberculosis while in the school environment. These accomplishments can now be easily attained; there is no longer any excuse for the teacher to contract tuberculosis in college or in the school system. This is not theoretical; indeed, it is the actual practice in many parts of this country. Through the work of tuberculosis associations, health officers, boards of education, parent-teacher groups and other organizations, particularly the nursing and medical professions, we now have whole areas where the tuberculosis status of every member of the entire school personnel and every child in the school system is known. Among the pioneers in this work, Dr. Lewis S. Jordan and his wife, Kathleen Smith Jordan, also a physician, are outstanding; their work merits particular mention here.

As director of a tuberculosis sanatorium at Granite Falls, Minn., Dr. Jordan in 1931 started a campaign

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to examine as many as possible of the school children in the four counties which his sanatorium serves. The public schools presented a concentration point and were the logical place to administer tuberculin tests. The fundamental objective was to discover which children had been infected with tubercle bacilli, so these could be kept under observation and protected against further exposure.

The most difficult problem was to obtain the consent of parents to examine their children, since they had almost no information on the subject. It was necessary to go before parent-teacher meetings, civic organizations, farmer groups and women's clubs to present the problem and the contemplated control program.

The possible existence of tuberculosis among the personnel as well as the children of the various school systems was given due consideration. In one of Dr. Jordan's earliest school surveys, a teacher of music was found to have advanced pulmonary tuberculosis with numerous tubercle bacilli in the sputum. He was coughing almost constantly and was seriously ill. Testing this teacher's former pupils with tuberculin, he found that one third had become infected—more than twice as many as in other parts of the school! This discovery compelled Dr. Jordan to work more earnestly on the problem of tuberculosis among school personnel. He considered that untested or unproved teachers are a potential menace to the health of the children whom they teach. This problem was immediately brought to the attention of school boards throughout the four counties, with the result that teachers and other members of the school personnel are now required to present certificates showing that a complete examination, including tuberculin test, x-rays of the chest and laboratory and clinical examinations as indicated reveal no evidence of tuberculosis in communicable form. After employment, adequate examinations are required every two years. So far, fourteen teachers with clinical tuberculosis have been found; eleven had the disease in communicable form.

Dr. Jordan has frequently found persons with communicable tuberculosis by first examining children for tuberculin reactions and then seeking the source among their adult associates. Such persons have been isolated in the sanatorium and treated to prevent the further spread of germs in their communities. He has also taken an active part in supporting the veterinarians in their efforts to control tuberculosis in domestic animals. There is tangible evidence of the effectiveness of this ten year program. In 1930-32, 14.1 per cent of school children in the district reacted to tuberculin, whereas in 1940 this percentage was only 6.7. When only the children from rural schools are considered, the incidence of tuberculin reactors has decreased from 8.2 to 1.9 per cent over the same period.

Since attention has been called to the inroads tuberculosis is making among educators and methods of protecting them have been standardized, much effort is being put forth by numerous organizations to create an environment free from contagious tuberculosis in all the school systems of the United States. The American Academy of Pediatrics has appointed a tuberculosis committee which has adopted as its chief project a national program of protecting children against persons with contagious tuberculosis who are employed as domestics or in any capacity in the school system. In 1934, the American School Health Association appointed a tuberculosis committee which has adopted as its chief activity the promotion of the program of creating an environment free from contagious tuberculosis in the school systems. It is heartening to know that in nearly every state something worth while has been accomplished, and the program is being extended and intensified. This committee has a subcommittee in most states which is working with the subcommittee of the American Academy of Pediatrics. The two groups work in close harmony with boards of health, local health officers, boards of education, state and local tuberculosis, medical, nursing and educational associations, parent teacher associations and every other group that is interested and active in tuberculosis control.

While members of school personnel who have contagious tuberculosis may transmit it to students and others, it must not be forgotten that they may themselves contract tuberculosis from students; thus no program is complete which does not include adequate periodic examinations for students. For those under high school age, the tuberculin test is usually sufficient for the purpose of finding those who are infected in order to seek out the sources of infection among their relatives and other adult associates. Since children in this age period develop contagious tuberculosis in the lungs so rarely, it usually is not necessary to proceed further with the examination, even of the tuberculin reactors, until they become high school students. At this time, however, a complete examination for tuberculosis should be performed annually on all reactors. When this is done, any tuberculosis of the lungs that may become contagious can usually be detected long before it causes illness and treated before it incapacitates the student or becomes a menace to others.

In 1931, the American Student Health Association appointed a tuberculosis committee to promote an adequate tuberculosis control program among students in colleges and universities. The recommended program consists of administering the tuberculin test to all entering students, making an x-ray examination of the chests of the reactors and a more complete examination wherever x-ray shadows which might be due to tuberculosis are present. When the disease is found in a contagious stage, the student is refused admission until he has been treated. For those who are found to have a less extensive form of the disease, special treatment such as lung collapse is often instituted, and

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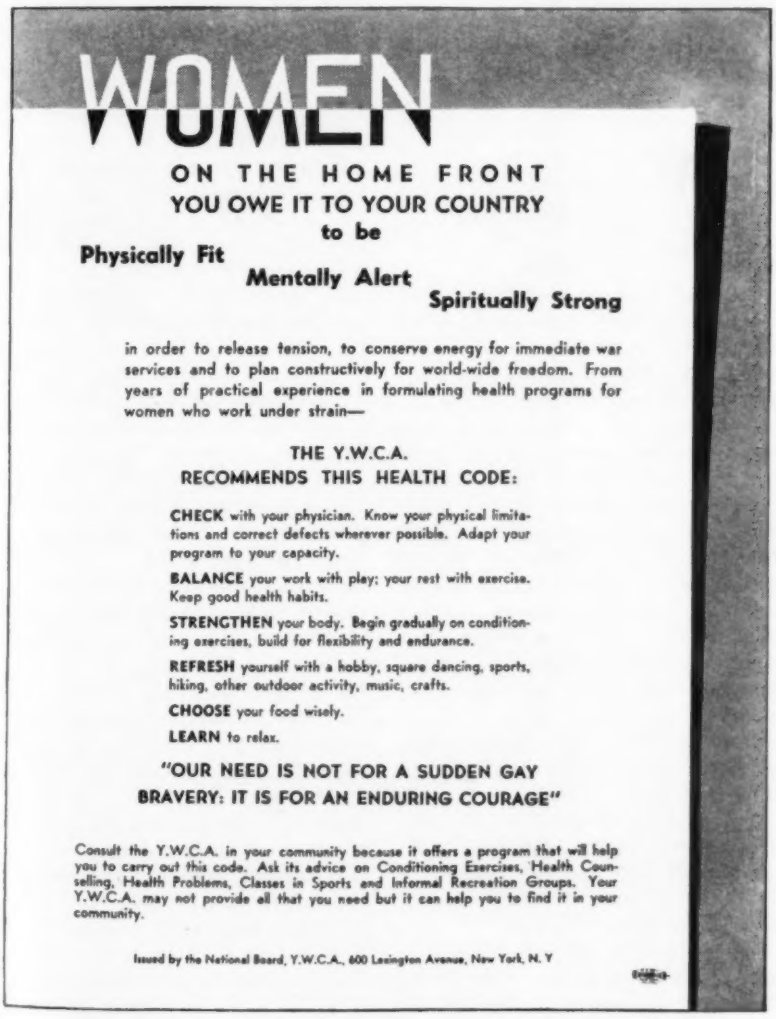
## AUTHOR

Virginia L. Dustin, co-author with J. Arthur Myers, M.D., of the HYGEIA articles on tuberculosis, is a graduate of the University of Minnesota. She has lived all her life in Minnesota, where her people settled when they came to this country shortly after the Civil War—presumably, she says, because the lakes and cold winters of Minnesota reminded them of their native Scandinavia. Whatever the reason, their choice is satisfactory to Miss Dustin. "Minnesota," she says, "is a good place to stay home in."

the student is permitted to pursue his course. After the initial examination, the ideal program consists of administering the tuberculin test annually to all students who have not reacted previously and making x-ray inspections of all students who become reactors while in school. In this manner it is possible to eliminate students with contagious tuberculosis and to detect lesions of others before they become contagious. This work is increasing from year to year, and the time does not seem far distant when all colleges and universities will have adequate tuberculosis control programs for their students.

## YWCA ISSUES HEALTH CODE

Believing that it has a major responsibility to convince women that they must conserve their energies and balance their lives to build health and vitality, the National Board of the Y. W. C. A. has formulated essential health principles into a "health code" which it seeks to bring to the attention of women throughout the country to make their services on the "home front" more effective. The poster reproduced here, embodying a statement of the health code, is available in 8½ by 11 inch size at 50 cents a package of twenty-five posters. Women's clubs, educational groups and civic, social or religious organizations interested in focusing attention on better health may obtain the posters by writing to the Woman's Press, National Board, Y. W. C. A., 600 Lexington Ave., New York City.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LEARN to relax.
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Consult the Y.W.C.A. in your community because it offers a program that will help you to carry out this code. Ask its advice on Conditioning Exercises, Health Counselling, Health Problems, Classes in Sports and Informal Recreation Groups. Your Y.W.C.A. may not provide all that you need but it can help you to find it in your community.
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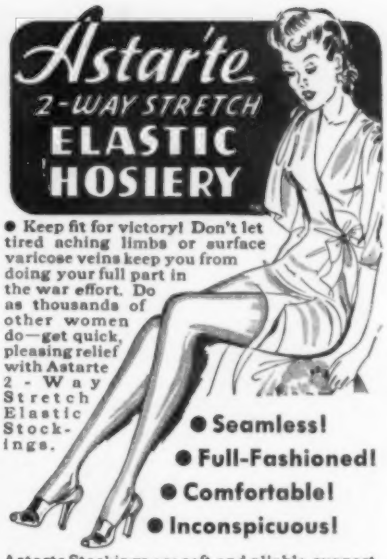


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(Continued from page 733)

long as the law permits, maintains a car and buys his own clothes, although his father makes a good salary. He is extremely nervous and generally below par, yet is unwilling to risk his dad's disapproval by asking for money.

I hear this complaint repeatedly from both boys and girls—lack of interest shown in them by their parents! What do parents mean by being so preoccupied with bridge and other clubs, or even business, that they deny themselves and their understanding and companionship to their children during the most important stage of their development? If these children come through the process of growing up unscathed, it is often a matter of luck. If they become involved in some sex or other difficulty, the parents are heartbroken. They never realize that they have been remiss in their guidance and supervision.

Today many children come to school without breakfast because parents are too indifferent to get up and see that they eat properly. Also many children go home from school daily to find the house quiet and empty. The mother is at some club, or she may be working when careful planning would enable her to manage very nicely on her husband's income. Little or no supervision of her children during their formative years and at the most susceptible hours of the day is the result. Often it falls to the lot of the public schools to try to correct some of the erroneous ideas and detrimental habits formed in earlier years through this sad neglect at home.

In many high schools, including our own, much fine background is being laid for successful marriage in a course in Human Biology in the science department, in Home and Family and other courses of the home economics department, and also in social studies.

The arrangement and working plan of our Hygiene and Home Nursing Department at the Libbey High School, Toledo, O., makes sex education a gradual and natural process. From the beginning of the year we emphasize the fact that in our classes we are like one big family, that any criticism is made in the most kindly and constructive spirit, that the girls may bring their problems to me for consideration and that we may even discuss them in class.

During their class activities these young women learn scientific terms and proceed in an orderly way to gain new knowledge and to correct false conceptions.

Since each one works in the health room as nurse's aid for at least a month during one study hour daily, all the girls become well acquainted with each other and with me. They meet and help to solve many actual problems that come to us, soon becoming so interested and absorbed in helping others and in applying their technical knowledge acquired in class that they have neither time nor taste for sordid thoughts.

We study menstruation because they must know about this function and know how to relieve cramps when they work in the health room.

We devote two lessons to learning how to give a bed bath. I ask for a volunteer from the class to bring her personal articles to school and act as my patient. On the day following my demonstration, she in turn gives another volunteer a bed bath before the class. Each girl is then given a form to have her mother fill out stating she has given a bed bath to her mother or to some other member of the family in the presence of the mother.

Our next project is the baby bath. We usually use a doll for this purpose, but this year one of the students brought her 5 month old sister and demonstrated before the class. When there was a discussion of the care of the genitals of both male and female, not one knowing look was passed. Only the deepest interest was shown.

Another lesson is on constipation. Recently our school was evaluated by outside educators. Wishing to show a true picture of our class work we continued our lesson on this subject, which had been interrupted the day before. In one class of thirty-four senior girls we had two guests, a man and a woman. The recitation proceeded as naturally as it would have if we had

been alone, without the slightest embarrassment on the part of students or visitors. The gentleman told me afterward that he was amazed at their poise, which he felt was equal to that of college women.

With the lessons and experience that I have just described as a preliminary, we arrive at our last unit of the year, the course in Social Hygiene, which includes boy and girl friendships, courtship and marriage, venereal diseases and prenatal and postnatal care.

Over a period of years we have gradually accumulated a variety of reading material on sex and marriage. For a few days the hygiene and home nursing classes are given class time to read any of these books or pamphlets which they find of interest. Some are so eager to learn about the mystery of life that they come to the health room to read during their study hour, too. Those who are less well adjusted at home or in school are the ones who come most often. Others who can talk freely with their parents feel that there is not much else they care to know.

In a large class, even one prepared as is this group for social hygiene subjects, I like to use reading material for indirect teaching for several reasons:

1. There is available splendid subject matter which has been thoughtfully prepared and carefully worded. It presents facts in a straightforward way, yet with a subtle appeal to young people to keep themselves "clean" until marriage, when sex experience can yield the maximum happiness. This is done without preaching and by some one outside the teaching field.

2. Young people come from all kinds of backgrounds. All sorts of inhibitions may lurk in their subconscious minds. There is less shock given to their sensibilities when they can read, openly and without fear of disapproval, facts that are of vital interest to them and about which they have a natural curiosity. This is especially true if they have learned from their parents that the subject of sex is not "nice" or if their knowledge was obtained under vulgar and undesirable conditions.

3. This reading in a natural setting, where other girls of their own age are also showing a wholesome interest and seeking information, helps to remove barriers of restraint. They sense that in such a sympathetic atmosphere they may ask questions which come to them and will receive courteous and helpful consideration.

After our reading periods each girl is asked to bring problems which she feels a young woman faces in her associations with boys and girls, and to select for discussion the principles one should consider before marriage.

The following questions were submitted by members of the 1941 classes:

At what age and how often should girls begin to "date," and how late may they stay out?

Should a girl kiss a boy goodnight?

What effect has smoking or drinking on motherhood?

When a girl on a date does not care to "go along," how can she get out of it tactfully?

How long should a girl go with a boy before considering marriage, and are long engagements desirable?

Is it wise to have physical examinations before marriage?

Should religion be considered before marriage, and should different nationalities marry?

How can one decide whether it is real love?

What is the most desirable age for marriage and motherhood?

How can a girl tell about a boy's attitude toward sex and having a family?

These problems were discussed as seriously and intelligently as many adults would have discussed them. I have taught approximately eight hundred young women in these hygiene and home nursing classes since Libbey High School opened in 1923. Judging from reports, announcements in the newspapers, their return to tell me of their engagements and later to show their little ones, I believe that a real need in the lives of these young people has been filled. Their serenity, poise and satisfaction with life are being projected into the lives of their children and their families and are making for happiness and contentment in that great American institution, the home. Sex education in high school achieves a worth while objective.


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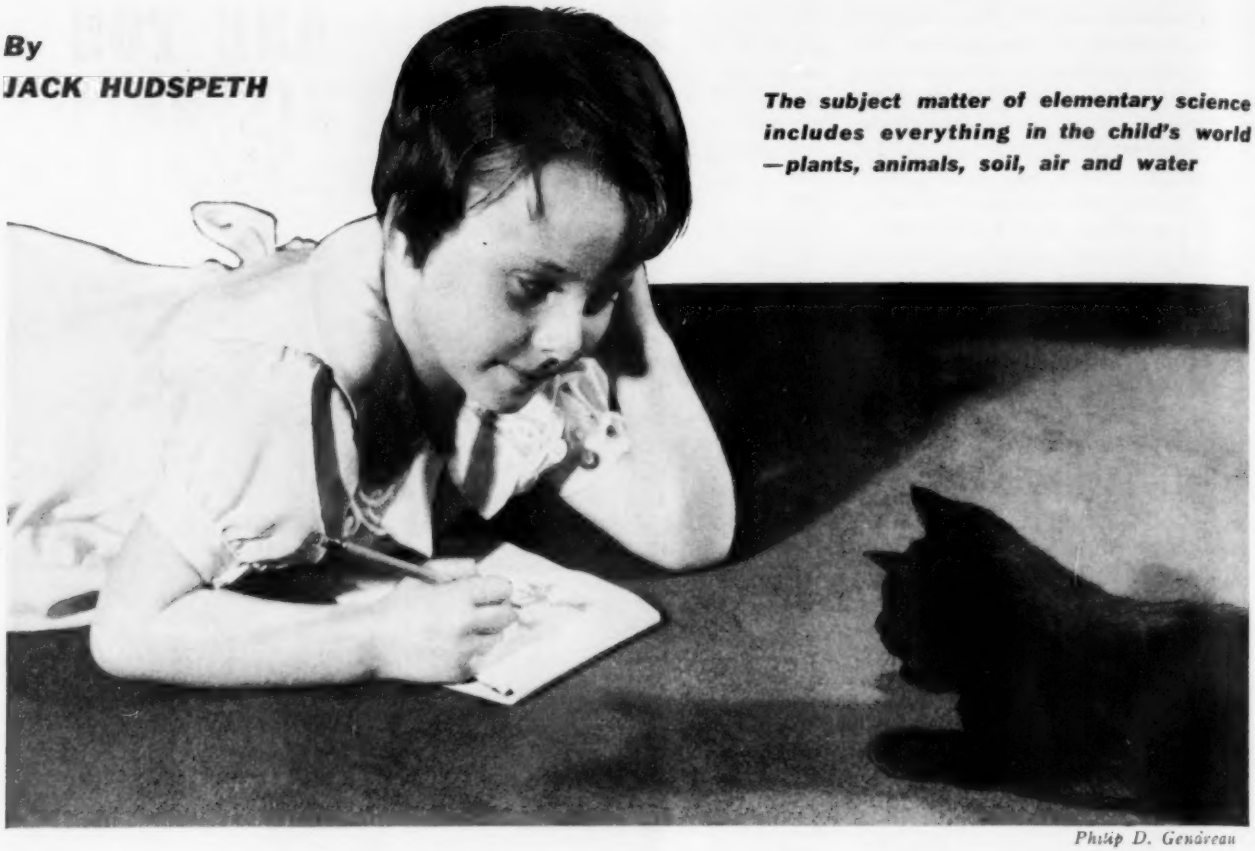

*The subject matter of elementary science includes everything in the child's world —plants, animals, soil, air and water*

*Philip D. Gendreau*

# ELEMENTARY SCIENCE in Our Schools

YOU PROBABLY always cover a sneeze with your handkerchief and wash your hands before eating. You know how to select a balanced lunch at a cafeteria, and when you step off a curb you always look for cars. You do these and similar healthful acts without thinking; the behavior is habitual.

But you were not born that way. You learned those habits and that information many years ago. You probably learned them in a haphazard manner during and after graduation from the public schools. Undoubtedly your behavior is still somewhat unhealthful; you missed learning some of the desirable habits and knowledge.

We now know that such vital learning need not be haphazard and incidental, guided only by chance. Young children can be *taught* how to live healthfully and *guided* to form habits that will make their living more healthful. Young boys and girls like to study about the human body and its care (as long as the language is simple and definite), and they take information (but not advice) to heart and act accordingly.

Unfortunately, this instruction has not been common in the public schools of America. For some years most teachers and school superintendents have approved the teaching of habits and information that make for healthful living, but there has been no place in the conventional school program where this instruction could be included conveniently. To be effectual, the instruction must be in the elementary school, where children are quick to pick up habits, attitudes and information relative to their everyday living. A few schools have made health a special subject, but the results have not been uniformly good. The teaching of health may easily become moralizing, and then it is totally ineffective with children.

Let us look at the conventional program of elementary school subjects. The *skill subjects* include arithmetic, spelling, handwriting, reading and the use of language. The *information subjects* include history, geography, and civics (all usually called "social studies"). The *recreation subjects* include physical education, art, music, dramatics, clubs and shop work (usually woodworking).

Where could health be fitted into such a program? Physical education seems an obvious answer, but it has not worked out that way. Physical education classes are usually much too large, and they usually lack facilities for classroom study. Physical education is instruction in healthful outdoor play —a worthy and necessary part of a child's schooling. But play is only a part of the child's activities; he should be healthful in *all* activities—eating, working, dressing, walking, studying, bathing and even sleeping. Health instruction must go far beyond play; it must include everything that the child does and comes in contact with.

Fortunately this instruction has a place in a new subject which has

begun to creep into America's elementary schools. The new subject is elementary science. Do not let the name mislead you. The science of elementary science is not the science of the research laboratory —there are no formulas, no delicate instruments, no jawbreaker names, no studies of atoms, no dangerous chemicals.

The subject matter of elementary science includes everything in the child's surroundings plus the child's body itself. "Everything" includes the plants and the animals, soil, rocks and minerals, water and air and the many man-made materials and objects with which the child comes in contact, directly or vicariously. The instruction is homely, practical, down to earth and lots of fun for the children. A few good textbooks and work texts are now available for elementary science, but the teaching does not stop with reading and seat work—it also includes many classroom activities and projects, field trips and simple experiments. Little scientific apparatus is used, but the work abounds in materials brought in by the children—rocks, leaves, seeds, live pets, mechanical toys, box cameras, insects, goldfish, old birds' nests and newspaper and magazine clippings. The child is taught to consider his surroundings sensibly with the information at hand or that which he can locate in books.

Here is an ideal situation for the teaching of health habits, attitudes and information. These are taught just incidentally enough to escape the appearance of moralizing and directly enough to make the pupil feel required to learn them and include them in his daily life.

In elementary science each beginning pupil learns to wash his hands before eating, keep his pencil out of his mouth and practice other habits of personal cleanliness. He also learns to brush his teeth in the morning and at bedtime, to go to the toilet at regular intervals, eat and retire at specific times and follow other habits of routine existence. Little academic knowledge is taught in the lower grades; instruction in these habits is direct, and each child's daily performance is recorded, often on a chart in the classroom.

Although she teaches *about* germs, the teacher knows that this is not enough to induce the child to keep his pencil out of his mouth. She must teach the habits directly; she teaches him not to put his pencil in his mouth. She does the same with other unsuitable objects until finally, after weeks or months of active guidance, she summarizes by teaching the little child not to "put things" into his mouth. In this manner the instruction gradually produces not just many individual habits, but a generalized system of habits and finally a trait of personal cleanliness. Here is character education indeed!

In the upper elementary grades the science goes beyond the child's immediate surroundings. He studies plants and how they make food; seeds and how we get food from them; air and how the body uses it; man's uses of domestic animals; proper usage of household devices; proper lighting; the body's uses of foods and how and what one should eat; poisonous plants and animals; fungi and bacteria; how to avoid common diseases; and many other matters of personal interest and value to the child.

This elementary science is still new, and it is only slowly appearing in our educational system. But this is not because school authorities do not appreciate its value; most of them do. It is because the school program is full and if anything is added, something must be taken out. Selecting that something is a problem to which no universally satisfactory answer has yet been found. But the trend is on, and with the co-operation of parents and teachers, elementary science and its health education will become as common in our schools as the three R's.

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# New Knowledge About Polio

(*Continued from page 755*)

And he had gotten it from sewage. Note the incredible toughness of this virus! It could survive in sewers, despite soapy water, acids and chemicals. In minute quantities, it was still capable of producing the disease in a monkey.

Following up this clue, Trask and Paul went from city to city where there was polio: Detroit, Cleveland, New York, seeking and finding microbes in sewage.

In New York they found something which again showed the potency of the virus. One trunk sewer accommodated 600,000 people. Among the 600,000 there were but four known cases of polio at the time. Yet a sewage sample produced polio in a monkey. Calculations made at Charleston indicated that sewage flowing through one branch line in one minute contained enough virus to give polio to 18,000 monkeys! And probably an equal number of children.

Dr. John A. Toomey of Western Reserve and Drs. Albert B. Sabin and Robert Ward of the University of Cincinnati, top-ranking research men, were checking this work. Time and again they found polio virus in sewage.

But all this left a great deal to be explained. Suppose there was virus in sewers and open privies—enough to make a generation of cripples. It still didn't explain how this virus got into the bodies of children. There was a missing link.

For a long time investigators had guessed that some insect might be involved in the polio picture; that this mysterious insect might spread the disease in the same manner that the mosquito spreads yellow fever. There had, in fact, been some suggestive laboratory work.

In 1911 Simon Flexner of the Rockefeller Institute let flies feed on material contaminated with virus. Then he had gone on to demonstrate that virus could be recovered from the flies. The experiment was interesting—but didn't prove a great deal.

Then, two years later, Milton J. Rosenau of Harvard did a piece of provocative work. He put a monkey sick with polio in a cage with biting stable flies and allowed them to feed for a while. Then he replaced the sick monkey with a well monkey. For several days the flies were allowed to bite—and the new monkey got polio.

This looked like a tremendous accomplishment. A few weeks later the experiment was duplicated by another group of workers. It looked as if the finger of shame were on the culprit. Then no one could repeat the work. After that well monkeys resolutely refused to get the disease, no matter how much they were bitten.

Still, Paul and Trask couldn't get this fly work out of their heads. Because of the fly's well-known predilection for feeding on filth it seemed so likely . . . But good research men can't afford guesses. They must know. Last year Trask and Paul set out to see what could be found.

Several youngsters in a children's camp in eastern Connecticut came down with polio and a number of others had a mild sickness which looked like abortive polio. The two researchers placed conical fly traps outside the camp kitchen. While the traps were doing their work Trask and Paul began scientific gumshoe work around the camp. The first thing they noted was that garbage pails were exposed—which accounted for the swarms of flies. Then they made a telling discovery. Instead of going to the camp latrine, some children had gone to the bushes back of a tennis practice board. Here, too, there were swarms of flies—flies feeding on intestinal discharges that were almost surely contaminated with polio virus.

After two days' trapping Trask and Paul had collected about 1,200 flies. They took them back to the New Haven laboratory. They ground up the flies in a Waring cocktail mixer—one of the most effective laboratory tools ever invented. They mixed this puree of flies with distilled water, allowed solid matter to settle and shot the clear liquid into a monkey. For two weeks they watched the mon-

key. Nothing happened. Then, on the morning of the fifteenth day, the monkey was dragging around his cage with his front legs. His paralyzed hind legs were limp. For the first time in history, polio virus had been captured from insects found outdoors.

This tremendously exciting work was barely finished when polio broke in little Jasper, Alabama—a coal-mining town. Trask and Paul hurried to the scene. One of the focal points of the epidemic, local health officers said, was three tumbledown miner shanties. All three households used the same open privy. And youngsters in each household were down with the sickness. Trask and Paul put their fly traps by the privy, made more fly soup, and made more monkeys sick.

Meanwhile, Sabin and Ward were working miles from this scene of degradation and poverty: in a scrupulously clean modern housing development in Cleveland where a few cases of polio had appeared. There were so few flies that trapping scarcely seemed worth while. It took three days for bait of sliced bananas and sugar to draw 500 flies. But they were polio virus carriers. So were flies trapped by Toomey at the same time at a sewer mouth on Lake Erie.

Since flies carry virus it seems altogether likely that their bite can carry the disease. But that isn't yet proved. Actually, it isn't certain whether the house fly carries the virus inside himself or on the surface. Much is yet to be learned.

Nor does this new work rule out the sneeze as a means of spreading polio. Authorities today prefer to work on the hypothesis that there are several methods of spread. Monkeys can get polio through the nose, by eating, or by injection under the skin. It seems likely that the same is true with human beings.

In the light of present knowledge, poliomyelitis may be spread by contact, droplet infection, feces, polluted drinking water, polluted beaches or swimming pools, milk, food, and by insects. No one has produced evidence to show which of these potential methods of infection, or which of the several possible ways the virus can get into the body, is the most common or most important. The great discovery is that it can be sewage-borne.

Progress this past summer was hampered by war and untimely death. Dr. Paul is busy with war work. Last spring Dr. Trask was working at Chanute Field, Ill.—assigned by the army to study diseases caused by streptococci. Like scores of gallant research men before him, he had a brush with the microbe he was fighting. Forty-eight hours after infection was detected, he died.

But his work and the work of the other indefatigable searchers for the truth lay the broad outline for one avenue of attack on the dread disease. Whether polio is usually, or only sometimes, spread by flies, there is new reason to fight the filthy fly. An intensified "swat the fly" campaign may not wipe out poliomyelitis, but if it even reduces appreciably the number of cases, it will be well worth the cost.

## DEFORMITIES FROM INFANTILE PARALYSIS ARE NOW OUTLAWED

The deformities that sometimes result from infantile paralysis have been outlawed, John F. Pohl, Minneapolis, declares in *The Journal of the American Medical Association* in a report of the first cases treated in the United States by the method evolved by Miss Elizabeth Kenny, the Australian nurse. From the results obtained from the Kenny treatment of 26 patients with infantile paralysis, the author declares that "The method should be immediately adopted as the fundamental treatment of the disease of anterior poliomyelitis."

*The Journal* says that "The advances that have been made give assurance of greater preparedness on the part of the medical profession in meeting any outbreaks of the disease that may arise in 1942. . . . Step by step the battle against poliomyelitis is being won. The information that has been gained on the nature of the virus and methods of its transfer has been notably extended during the past year. The contributions of physiologists, neurosurgeons and physical therapists help to overcome the ravages of the disease."

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# *Medical News*

## OF THE MONTH

### *Must Conserve Hospital Supplies*

The waste of hospital supplies, however slight, must be scrupulously avoided if the nation's civilian and military needs in this regard are to be met, the Committee on Drugs and Medical Supplies and the Subcommittee on Hospital and Surgical Supplies of the Division of Medical Sciences of the National Research Council declare in a joint statement published in a recent issue of *The Journal of the American Medical Association.*

### *"Cotton Bacterium"*

Throughout the period from March to December 1941 there were numerous sudden outbreaks of acute illness among workers on rural mattress making projects and outbreaks of a similar illness also were reported in one cotton mill and in several cottonseed processing plants. In a recent issue of *The Journal of the American Medical Association* Paul A. Neal, Roy Schneiter and Barbara H. Caminita report that the illness was caused by the breathing in of a minute organism or its poisons contained in or on dust from stained cotton. They tentatively give the microorganism the name of "cotton bacterium."

"This illness," the investigators say, "resembles mill fever, Monday fever and gin fever in cotton mill workers. . . ."

### *Hemorrhage of the Newborn*

The administration of vitamin K to the mother while she is in labor will prevent the depression of the prothrombin or blood clotting level of the newborn and should prove effective in lowering the incidence of hemorrhage of the newborn, J. E. Fitzgerald and Augusta Webster declare in a recent issue of *The Journal of the American Medical Association.* "It is well known," they say, "that various types of hemorrhage in the newborn account for a considerable percentage of stillbirths and neonatal [at birth] deaths. . . ."

### *Typhoid Death Toll Dropped in 1941*

The thirtieth annual report on deaths from typhoid in the large cities of the United States, compiled by and published in a recent issue of *The Journal of the American Medical Association,* reveals that there was a significant decrease in the death toll from this disease in the large cities in 1941. Particularly noteworthy, the report points out, is the fact that while in 1940 there were twenty-four cities with typhoid death rates exceeding 1.0 per hundred thousand population, in 1941 there were only eleven such cities.

### *Reducing Injuries from Auto and Airplane Accidents*

A mechanical analysis of 7 cases in which human beings survived free falls from heights of 50 to 150 feet leads Hugh DeHaven to declare in a recent issue of *War Medicine* that the fact that these survivals occurred when the necessary factors for survival were accidentally contributed indicates the possibilities of inceasing survivals and reducing injuries from automobile and airplane accidents by structural alterations in design that might be introduced.

"The human body," he declares, "can tolerate and expend a force of two hundred times the force of gravity for brief intervals.

"It is reasonable to assume that structural provisions to reduce impact and distribute pressure can enhance survival and modify injury within wide limits in aircraft and automobile accidents."

### *Medical Schools to Graduate Record Number in Three Years*

During the next three years 21,029 students will be graduated by approved medical schools of the United States as a result of accelerated programs initiated to meet the unprecedented demand for physicians brought about by the war, according to an estimate contained in the annual compilation of educational data by the Council on Medical Education and Hospitals of the American Medical Association, published in a recent issue of *The Journal* of the Association. This is 5,082 more than would have graduated without the adoption of accelerated programs.

"Never before in the history of this country have as many as 21,000 physicians been graduated from its medical colleges within a three year period," the report says.

Although it is difficult to determine what the over-all effect of the war will be on the annual deaths of physicians, the report says that the estimated number of graduates of the approved medical schools during the next three years, based on the number of deaths annually of physicians during recent years, provides more than two graduating physicians for every death.

All but four medical schools have initiated an accelerated program to increase the supply of physicians for the Army, the Navy and the civilian population. The plan provides for the utilization of the long summer vacation as a teaching period, and, by continuing the schedule throughout the calendar year, the four year medical course is completed in three years.

### *Safeguarding Health of Medical Students*

With medical students being called on to complete a difficult four year course in three years because of the increased need for physicians brought about by the war, medical schools should do everything possible to protect the health of those students, not only in the interest of the students but also as a national duty, *The Journal of the American Medical Association* advises in a recent issue.